Export-led Development:
A Theoretical and Empirical Investigation

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For John Weeks

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ABSTRACT

This thesis contributes to the debate surrounding the export-led development hypothesis by critically examining its theoretical and empirical validity. The first part of this thesis challenges different versions of comparative advantage theory and argues that the theoretical foundations of the theory are weak.

The second chapter goes beyond the conventional critiques, which focus on the assumptions of Ricardian comparative advantage theory, and argues that the real weakness of the theory can be found in its static nature and its simplistic treatment of labour theory of value. The third chapter argues that the neoclassical version of the theory has fundamental problems in its interpretation of capital and labour as factor endowments. It also questions the relevance of empirical work by arguing that even if the theory could predict the trade pattern of a country correctly, this would not prove its accuracy.

The first part of chapter four challenges the 'dynamic' versions of comparative advantage theory and argues that the theory is static in its nature and cannot be made dynamic. The second part of this chapter evaluates the debate over trade policies and attempts to clarify the confusion over the definitions of import-substitution and export-promotion. The third part summarises and critically evaluates the controversy over the so-called export pessimism and provides theoretical and empirical evidence in support of its validity.

The second part of this thesis investigates the empirical support for the export-led development hypothesis. Chapter five questions the relevance of the empirical literature by examining the measures of openness and techniques that are used. It argues that the majority of the literature is irrelevant and does not provide meaningful evidence to support or reject the export-led development hypothesis. Chapter six offers an alternative measure of trade openness, which is based on a 'structurally adjusted trade intensity' index, and empirically tests whether openness accelerates economic growth. Chapter seven criticises the World Bank's 1993 report on Asia and shows its weaknesses in terms of the trade policies adopted by Asian countries. The final chapter concludes by suggesting an alternative interpretation of the recent popularity of export-led development policies.

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ACRONYMS

DFTT	Double factoral terms of trade
FTT	Factoral terms of trade
HPAEs	High performing Asian economies
IRER	Internal real exchange rate
MPM	Metal products and machinery
MRER	Multilateral real exchange rate
NBTT	Net barter terms of trade
SFTT	Single factoral terms of trade

In the old story, the peasant goes to the priest for advice on saving his dying chickens. The priest recommends prayer, but the chickens continue to die. The priest then recommends music for the chicken coop, but the deaths continue unabated. Pondering again, the priest recommends repainting the chicken coop in bright colours. Finally, all the chicken die. 'What a shame', the priest tells the peasant. 'I had so many more good ideas.'

The Economist (29 June 1996)

CHAPTER ONE

INTRODUCTION

1.1. BACKGROUND

Neoclassical revolution of the 1980s

The revival of neoclassical 'wisdom' during the 1980s was due in part to the poor performance and crisis of the world economy during the 1970s. The world economy experienced an impressive growth performance after the Second World War for almost twenty-five years. During this process, Keynesian policies that emphasised the role of the state and demand management played an important role. The state was given a pivotal place in the development process. Many developing countries adopted import-substitution policies in order to stimulate industrialisation. The aim of the international world order was to build international cooperation, create the conditions for human security and prevent the pre-war pattern of 'every country for itself'. Two Bretton Woods organisations, the World Bank and the International Monetary Fund, were created to facilitate the new international order. State intervention was seen as a device to sustain full employment, economic growth and adequate welfare services.

These principles were reversed in the 1980s. The world economy slowed and fell into recession with the oil crises of 1973 and 1979. Western countries witnessed an

erosion of the Keynesian consensus. Right-wing governments came to power in Europe and the United States. They radically changed the ideological setting of the world. The prolonged global economic crisis of the 1980s and the inability of many governments to manage the economy were interpreted as a failure of alternatives to the neoclassical wisdom. The state was now seen as an obstacle to development rather than a facilitator. The focus of economic management changed from growth to efficiency. Because the market was assumed to be more efficient than the state, 'rolling back the frontiers of the state' became the chief slogan.

The World Bank and the International Monetary Fund were also restructured in order to implement market reforms in developing countries. The so-called 'Washington Consensus' transformed the policies of these institutions. Stabilisation and structural adjustment programs were introduced with a clear neoclassical emphasis. According to these institutions, the problems of many developing countries were self-inflicted, caused by policy mismanagement by governments. In order to solve this crisis, they offered lending conditional upon liberal policies and a reduction in the role of the state.

Before the 1980s, the World Bank lent for specific programs and projects. However, conditional lending became dominant during the 1980s. Because many governments were desperate to borrow, they had no option but to accept the lending conditions. Governments could borrow money as long as they implemented liberalisation policies almost regardless of economic performance. Stabilisation policies are short-run demand management packages to achieve macroeconomic equilibrium: a sustainable balance of payments, a reduction in budget deficits and low inflation. Structural adjustment programs are long-run supply-side changes, in order to stimulate economic growth by allocating resources more efficiently. They include trade liberalisation, a reduction in the size of government (including privatisation and expenditure cuts), domestic market deregulation, financial market deregulation and labour market deregulation.

The recommendations of these policies are inextricably linked to their identification of the causes of the crisis. As government mismanagement was identified as the main cause of the crisis, their focus was solely on government failure, and liberalisation was seen as a panacea for development. The prime aim of structural adjustment programs was to reduce state intervention to a minimum level. The impelling force for economic growth would come from a closer integration into the

world economy, rather than from the domestic market. A range of external and internal factors, including market failure, were largely ignored.

Developing countries faced a hostile international environment during the 1980s. The world economic crisis affected them severely. International markets became more competitive and developed countries became more protectionist. Demand for primary products fell, terms of trade worsened, and foreign aid declined. As export earnings fell, debt repayment obligations rose, leaving much of Africa and Latin America in financial bankruptcy. Many developing countries fell into the so-called 'debt trap'. The rise in oil prices increased import bills and forced more borrowing. They were also encouraged by Western banks to borrow in order to circulate the so-called petro-dollars. When developing countries borrowed large sums in the 1970s real interest rates were very low, sometimes even negative. However, during the 1980s real interest rates rose sharply as a result of strict monetary policies in the United States and Europe, which created enormous difficulties for developing countries. They were now highly indebted and, in order to make repayments, needed to borrow more at higher interest rates. It became increasingly formidable for developing countries to repay their debts. The worsening economic conditions reduced their financial credibility, and it was increasingly more difficult to borrow money from private international banks. The only solution was to borrow from the World Bank and the International Monetary Fund.[1]

For sure, there were big problems within many developing countries. They needed to export more and generate a structural transformation of the economy. Liberalisation was the solution offered by the World Bank and the International Monetary Fund. Liberalisation was gradually perceived as an answer to all the ills of the developing world. Ready-made prescriptions were put forward without considering specific country circumstances.

> Abraham Maslow once said that if the only tool you have is a hammer, everything begins to look like a nail. The prescription of liberalising all conceivable markets in countries in every conceivable political circumstance is

[1] 'As the debt crisis deepened, more and more countries came under IMF-World Bank tutelage.' (Oxfam, 1995b: 74)

beginning to look increasingly like the application of Maslow's hammer. (Banuri, 1991: 25)

Trade as a benefit to all countries

The idea that unrestricted international trade is beneficial to all participating countries is one of the oldest propositions in economics. It is said to work automatically to promote economic growth and income equality. Trade liberalisation is one of the most important components of structural adjustment programs. Trade liberalisation and export-led development, two concepts often confused, were offered as a development *strategy*. Exports were seen as the engine of growth. Trade liberalisation was expected to promote recovery by reducing the cost of imports. Exchange rate devaluations and import liberalisation have been implemented more vigorously than almost any other aspects of adjustment.

An argument in support of trade liberalisation is the recent globalisation thesis. According to the advocates of liberalisation, globalisation implies an integrated world through increased trade and capital flows. This, in turn, calls for governments to use liberalisation policies which reduce their capacity to implement independent national economic policies. The overall effect of this process is to tie together more closely what once were distinct and separate national economies. Capital is freed from constraints and has power to punish governments that limit its freedom. Consequently, globalised markets are very difficult to regulate. Governments that resist this process and try to implement interventionist policies quickly realise the impossibility of this and pay a heavy penalty. Governments are now at the mercy of uncontrollable global market forces. Financial and productive capital will flee from those countries that restrict their freedom and, by doing so, will put those economies in trouble. These developments are well advanced and irreversible. This process is seen as not only inevitable but also desirable. Liberalisation, as a result of globalisation, increases efficiency and productivity through competition and better resource reallocation. By reducing the arbitrary intervention of governments, it allows market forces to 'organise' the economy. All that national governments need to do is to do nothing, and leave everything in the hands of free market forces. This integration also benefits developing countries through the movement of capital which is now more evenly

distributed world-wide. Thus, globalisation brings global benefits to everyone. Through globalisation, national differences will virtually all disappear. Hence, we are witnessing the end of the Third World.

The assertion that unrestricted international trade is beneficial to all participating countries, however, is contested by the fact that free trade has always been favoured by stronger economies.[2] Most countries developed behind protective barriers, and allowed free trade only after they succeeded in developing international competitiveness. It is not surprising that free trade theory emerged in the United Kingdom, the first industrialised country. In the 19th and early 20th centuries, continental Europe or the United States did not echo the demand for freer trade. On the contrary, they were firmly protectionist. It was not until the end of the Second World War, when the United States became the strongest trading country, that its government advocated free trade. The then-weakened United Kingdom, together with all other European countries, remained protectionist until the 1960s. As Brett points out,

> A successful political integration of an international economy based on *laissez-faire* would depend upon the ability to sustain a process of even growth in the development of the productive capacity of the various countries which composed it. (Brett, 1985: 30)

The basic proposition of modern trade theory is that unregulated trade promotes equality of income among the participant nations. This implies not only that all participant countries benefit from free trade, but that low-income countries benefit more. As an Oxfam report argues, '[t]his approach ignores the fundamental reality of the market place: namely, that [countries] enter markets as unequal partners, and they leave them with rewards which reflect those inequalities.'[3] Given that low-income countries are usually sceptical about the benefits of free trade, it is fair to ask why these countries are unable to understand the benefits of free trade policy. The

[2] Brett (1985: 52). 'The weak have always taken a much less enthusiastic view, since they were always more likely to find that their markets would be taken away from them by the more efficient foreign producers unless the state intervened to erect protective barriers behind which they would shelter.' Weiss (1997:13)

[3] Oxfam (1995b: 73).

orthodoxy does not have an answer to this question. This unquestioning reliance on the idea that free trade brings equalisation of income is disturbing in the light of historical evidence for a widening disparity between the developed and the developing world.[4]

1.2. METHODOLOGY

The aim of this section is to present briefly the major peculiarities of mainstream methodological approaches. By doing so, it will establish a methodological framework for the rest of this thesis. The debate surrounding international trade is a subset of a wider debate over the nature of state intervention. The 'state versus market' arguments have a well publicised and established history. In the literature, a distinction has been made between two broad approaches to development: structuralist and neoclassical. However, even though this categorisation may be useful for simplification purposes, inclusion of classical Marxism in the structuralism category is inappropriate.

Little (1982) categorises different theoretical approaches to the role of the state into two broad groups, neoclassical and structuralist. Structuralism is an umbrella term for a general 'anti-market viewpoint.'[5] It covers different non-neoclassical approaches:

> The structuralist sees the world as inflexible. Change is inhibited by obstacles, bottlenecks and constraints. People find it hard to move or adopt, and resources tend to be stuck. In economic terms, the supply of most things is inelastic. (Little, 1982: 20)

This inflexibility is particularly apparent in developing countries with poor infrastructure and underdeveloped markets. Since supply and demand are inelastic, quantity adjustments either do not take place or require large and disturbing price changes. Whilst exploring the origins of structuralism, Arndt classifies the 'market failure' arguments into three categories: signalling, response and mobility.

> First, prices may give the wrong signals because they are distorted by monopoly or other influences. Secondly, labour and other factors of production

[4] See Abramovitz (1989), Bairoch (1981, 1993), Gould (1972), Maddison (1991, 1995).

> may respond to price signals inadequately or even perversely. Thirdly, although ready to respond appropriately to correct price signals, factors of production may be immobile, unable to move quickly if at all. (Arndt, 1985: 152)

This challenged the neoclassical thesis, which suggests that given perfect competition and the absence of externalities, the market mechanism will produce the best desirable results through an efficient allocation of resources. Thus, state intervention is justified when markets fail. According to Arndt, this approach involves thinkers from a wide spectrum, such as Keynes, Nurkse, Lewis, Prebish, Singer, Myrdal, Sraffa, Chamberlin, Robinson, Kalecki, Seers and others.[6]

Given the diversity of theories, this categorisation, (neoclassical versus 'non-neoclassical') may be problematical. However, in the face of the recent unprecedented domination of neoclassical economics, and since different theories define themselves relative to the dominant view, this categorisation can be acceptable and even useful. Nevertheless, integrating Marx and classical Marxism into the structuralist category is inappropriate. Marx's analysis of the economy was fundamentally different from these two approaches.

Inspired by modernisation theories, neoclassical economics presumes that development is a natural process. Harmony is the rule and conflict is an exception. Since development is perceived to be a simple and linear process, rather than focusing on the dynamics of this process, it is preferable to focus on the external forces that divert and hinder it. There is progress unless there are barriers to it. The priority is on the identification and elimination of the factors that halt development. Once these factors are identified and eliminated, market forces can maximise the well-being of society. As a result, if all countries follow a number of simple rules, poverty and inequality would gradually disappear.

According to this view, capitalism is fundamentally a stable system and problems are caused by external shocks and interventions. As capitalism is normally stable, instabilities are seen as abnormalities. An exaggerated and caricaturized version of the theory would argue that the only effective way to eliminate the impacts of external shocks is to leave them completely to the market mechanism. Since markets

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[5] Arndt (1985:151).

are assumed flexible, shocks will quickly be eliminated and stability will be restored. Thus, the best policy for dealing with external shocks is not to deal with them at all. When the state intervenes, it causes more problems than it solves.

Structuralists, in contrast, argue that markets are not always stable and that there is no automatic mechanism to sustain stability at all times. There are ups and downs, swings and fluctuations. When there is an external shock, markets are not flexible enough to return to an equilibrium promptly. It may take a long time or equilibrium may never be achieved. The market mechanism itself can cause problems, and thus state intervention might be necessary, and even inevitable. Structuralists argue that even though the market mechanism is inherently unstable, stability can be established by state intervention. In this view, the linear approach is not abolished but modified. If the state applies sensible policies, development is still a straightforward process.

To put it simply, if prices could give the right signals (i.e. monopolies are eliminated or regulated), if labour and other factors of production could respond to price signals adequately, and if factors of production could be mobile and able to move quickly, the differences between neoclassicals and structuralists would disappear and structuralists would become neoclassicists. The difference between them is not qualitative but quantitative, not in nature but in degree. The important question for these two camps is the speed of price changes. Neoclassicists argue that prices adjust fairly quickly, so that there is no need for state intervention. For structuralists, however, sluggish prices require state intervention. Few neoclassical economists would contend that prices are always completely flexible, and few structuralists would argue that they are completely sticky. In a sense, the boundaries between these two categories are artificial and these polar sides are necessary to put the arguments in perspective. People who consider themselves as belonging to one of these two broad categories could be placed on a two-dimensional line so that their positions could be defined relative to one another. Since price inflexibilities are thought to be particularly widespread in developing countries, as development takes place, structuralists' arguments are gradually weakened and structuralists move towards neoclassical analysis.

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[6] See also Kay (1989) for a good exposition of richness and variety of the structuralist approach.

For Marxists, however, equilibrium is an exception and disequilibrium is the rule. Instability, disharmony and conflict are seen as the nature of the capitalist development process. In their view, capitalism is considered as an extremely dynamic system. Competition and productivity increase are the characteristics of capitalism. This dynamism, the unplanned, uncontrolled nature of capitalist development, itself is the source of instability.[7] Marxists would agree with structuralists that markets are inherently unstable, but for them 'market abnormalities' are not a major problem. 'Abnormalities' are seen as normal and inherent to the nature of capitalist development.

Marxists see economic development as an unstable, unlinear and uneven process. Development and underdevelopment (or prevented development, as defined in neoclassical economics) are the natural results of the same development process and are unseparable from each other. Development itself causes underdevelopment and there is no natural tendency for all countries to converge. Development and underdevelopment (or uneven development) are the two sides of the same coin. In this view, the optimism of neoclassical economics (and structuralism) is rejected. It is argued that the development process is an unlinear and extremely complicated process and no simple advice can be given to developing countries. Explaining development in a particular country does not imply the possibility of generating development elsewhere.

The way in which Marxists analyse the economy is fundamentally different. They do not place themselves on the two-dimensional line. Their approach can be thought of as constituting another dimension, and many of the two-dimensional dichotomies between neoclassicals and structuralists are irrelevant for Marxists.

For Marxists, 'state versus market' arguments are misleading. Neoclassical and structuralist views consider state policies as 'good' or 'bad', and all problems are caused

[7] Marx's analysis of capitalism is widely misunderstood. One extraordinary example can be given from Samuelson's famous text book. Confusing Marx's 'tendency of profit rate to fall' (TPRF) with 'law of diminishing return', he blames Marx for neglecting technological changes and inventions. He writes: 'If no invention had occurred, perhaps Marx would have been proven correct in his prophesy of the falling rate of profit. But invention increased the productivity of capital and repealed the law of the falling rate of profit. In the race between diminishing returns and advancing technology, technology has won by several lengths. Or, so history has progressed up to now'. (Samuelson and Nordhaus, 1985: 792). Confusing diminishing return with TPRF is bad enough, but blaming Marx for ignoring productivity increase is unfair. Not only the TPRF argument is based on productivity increase and not on the absence of it, but productivity increase is the base for all Marx's arguments.

by 'bad' policies. Naturally, the solution is to adopt 'good' policies. Identification of policies as 'good' or 'bad' is a matter of theoretical and ideological debate. From this perspective, however, it is impossible to understand why these 'good' or 'bad' policies are being adopted. Thus, 'history' is omitted or neglected.[8] Those who try to adopt a historical perspective (from the right or the left) mostly display an inaccurate understanding of the concept of the state and the international division of labour. First, state intervention (and consequently the state) is seen either as a pre-capitalist remnant which hinders capitalist development,[9] or as a tool for independent development. Second, liberalisation is viewed either as the necessity of internationalisation or as the opening up of the economy to the structure which is imposed by the international division of labour.[10] Rather than asking if state intervention in the economy is a 'good' or a 'bad' thing, Marxists are interested in the logic of the state. Why does the state exist? Why does the state intervene? They oppose the above views on the grounds that they are deceptive, misleading and ahistorical.

It is clear that, at certain junctions of history, one can identify different degrees of state intervention. Different levels of state intervention should be seen as a necessity in capitalist development, according to the needs of the capital accumulation process. State policies (more or less intervention or participation) in developed and developing countries, are determined by the dominant capital accumulation process which is itself determined by internal class structure and the international division of labour. Then, '[t]he primary function of the state-in-general is to guarantee the reproduction of capitalist social relations – relations which pertain to the existence of capital-in-general.'[11] In this view, it is argued that government policies and the state are not independent of the necessities of the capital accumulation process. Thus, the state is neither an enemy of the people nor an independent body which protects and promotes the public interest. Marxists claim that state intervention in the economy is a necessary but not sufficient condition for protecting the public interest.

The above arguments have direct relevance to the debate over international trade. Neoclasical theory claims that trade liberalisation tends to stimulate economic

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[8] Gulalp (1987).

[9] As the critiques of state intervention see the capitalist development as a linear process, liberalisation is seen as a breakthrough and true policies according to the logic of capitalism.

[10] Gulalp (1987).

[11] Fine and Harris (1979: 146).

growth and equalise income across countries. For this reason it is considered to be a 'good' policy. A variety of structuralist theories, however, argue that free trade does not benefit all countries equally, unless the state intervenes and guarantees that participation in international trade is beneficial for the country. Therefore, free trade is perceived to be a 'bad' policy. Nevertheless, they believe that international trade remains a good option for developing countries in their attempt to accelerate economic development. Marxism, on the other hand, argues that, free or controlled, in the absence of international planning, trade will necessarily lead to uneven development and international disintegration. They believe that controlled trade is preferable to free trade, but disagree that controlled trade can solve the problems of developing countries.

This thesis will follow the methodology of the Marxist line of argument. The structuralist approach will also be employed when appropriate. The Marxist and the structuralist approaches overlap considerably in their attempt to criticise and produce alternatives to the neoclassical approach. They are in agreement on the weaknesses of neoclassical theory.

Ideological nature of trade

Debates over economic doctrines are not pure academic matters; they concern the destiny of millions of people. As such, their inspiration is inherently ideological.[12] The world is disorderly and fractured, in which the observed reality is uneven development. All major indicators show that the income gap between rich and poor countries has never been so wide.[13] Billions of people in the world live under conditions of extreme

[12] Hudson (1992:1). Two different methodologies can be identified to the question of why and how economic theories are produced. One assumes that economic theories are pure and universally scientific. They are also independent of time, conditions and ideological perspectives of the economist, just like physical sciences. The second approach considers the broader philosophical, ideological background of the theories. Schumpeter is the leading figure for the first approach; G. Myrdal and J. Robinson are the leading figures for the second.

[13] The United Nations Human Development Report, 1998, provides some astonishing evidence. According to the report, the richest fifth of the world's people consumes 86 percent of all goods and services while the poorest fifth consumes just 1.3 percent, with a ratio of richest to poorest 66 to 1, which used to be only 30 to 1, in the 1960s. According to the report, the 225 richest people in the world have a combined wealth of more than $1 trillion which is equal to the annual income of the poorest 47 percent of the earth's population, some 2.5 billion people. The 3 richest people on the planet - Microsoft's Bill Gates, the Walton family of Wal-Mart stores and legendary investor Warren Buffett - have assets that exceed the combined GDP of the 48 least developed countries.

poverty. In this context, academic arguments on trade liberalisation can roughly be classified into two categories: for and against. The enthusiasm of both approaches to either criticise or defend trade liberalisation incapacitates them from understanding the logic behind it. Instead of starting with an attempt to comprehend how the world economy works, theorists usually seek *a priori* to defend the *status quo* or call for its transformation. The state-versus-market dichotomy and its variants result from such methodological comprehension. During the 1980s, the trade liberalisation versus protectionism debate became popular once again. 'Export-oriented' trade strategy became fashionable and attracted supporters some of whom succeeded in re-creating various myths around the concept. Economic liberalisation was offered as a panacea for the development problems of developing countries, regardless of their historical background. As Banuri (1991: 1) has noted, the 'broad agenda for policy debate on development [has been] replaced with the narrow and technical issue of the means and the speed with which liberalisation ought to be introduced in the economy.'

It is typical to discuss the objectives or to display the 'good' and 'bad' of different types of trade policies, but this debate proves to be a fruitless exercise. A more progressive and stimulating approach is to examine the dynamics of trade policies. In the literature, however, the arguments are largely dominated by efficiency considerations. This approach fails to comprehend the true nature of trade liberalisation. Even if protectionism is inherently inefficient, a better question would be to ask why free trade has not been adopted more vigorously by all countries. If all participants benefit from free trade, there should not be resistance to it.

A contributing factor might be that 'non-economists' in general, and policymakers in particular, are unaware of the benefits of a free trade policy. It takes a long time for them to be convinced that free trade would produce a sufficiently high political payoff to be worth pursuing at the expense of other policies. What are the reasons for protectionism in the first place then? Listening to some of the adherents of free trade, one would believe that governments only adopt protectionism out of stupidity or a wilful desire to wreck their countries' economies. According to Krugman (1998), intellectuals simply do not understand comparative advantage theory and the benefits of free trade. He suggests three reasons for this: first, at the shallowest level, some intellectuals reject comparative advantage simply out of a desire to be intellectually fashionable. Second, at a deeper level, comparative advantage is a harder

concept than it seems. And third, at the deepest level, opposition to comparative advantage reflects the aversion of many intellectuals to an essentially mathematical way of understanding the world.[14] He asserts that intellectuals do not understand 'Ricardo's difficult idea' and 'they do not even want to hear about it.' This view reduces trade to a technical matter. Trade relationships, however, signify deeper human relationships and should be analysed as such. The naivety of these overly simplistic arguments does not guarantee the accuracy of more sophisticated arguments. The aim of this dissertation is to argue that the theoretical and empirical arguments favouring the benefits of free trade are overwhelmingly based on unrealistic and overly simplistic assumptions and thus are neither convincing nor conclusive.

1.3. OBJECTIVES OF THE THESIS

In order to analyse the causes of the recent internationalisation and trade liberalisation processes, one needs to go beyond the narrow arguments on whether trade liberalisation and export-led development are good or bad trade policies. Nevertheless, the arguments on the implications of trade liberalisation are not trivial or nonsensical. The way trade liberalisation is presented (theoretically and empirically) gives some important hints about the underlying structure causing these changes. In order to know the real reasons behind trade liberalisation, the fictitious ones should be eliminated. This thesis limits itself to a less ambitious objective. It explores the theoretical and empirical literature to reveal whether the recent internationalisation process can be rationalised by the alleged benefits of international trade. The principal objective of this dissertation is to examine the theoretical and empirically validity of the arguments surrounding the trade liberalisation and export-led development hypotheses. It will investigate whether the liberal policies of the World Bank stimulate economic development in developing countries, and whether protectionist policies are the cause of stagnation. If the idea that 'increased international trade benefits all participant countries' can be rejected, there is a need to go beyond the narrow discussions on the benefits of trade policies. If increased internationalisation cannot be explained by the benefits of free trade, some other reasons must be investigated.

[14] Krugman (1998: 23).

This thesis examines the export-led development hypothesis from two perspectives. It first explores its theoretical cogency. There is an extensive literature on the theoretical foundations of the export-led development hypothesis. Since it was introduced by David Ricardo, comparative advantage theory has been modified and developed in various ways. The basic tenets of the theories, however, remained close to Ricardo's original ideas. For this reason, the thesis will only investigate the basic arguments of comparative advantage theory. Secondly, the empirical part evaluates the existing literature and attempts to make a small contribution to this literature.

1.4. STRUCTURE OF THE THESIS

The thesis is divided into two parts, theoretical and empirical. Part one provides an analysis of the theoretical discourse on the impact of trade on economic development. It comprises three chapters.

Chapter two examines the development of classical trade theory from the mercantilists to Smith and Ricardo. The focus is placed on Ricardo, the founder of comparative advantage theory. The mercantilists believed that a nation could gain from international trade only at the expense of other nations. As a result they advocated restrictive trade policies. Smith produced the theory of absolute advantage to justify free trade. Nations can gain from trade when one nation is more efficient than another in the production of one commodity, but is less efficient in the production of another commodity. His theory, however, was unable to explain trade when one country had no absolute advantage over another. Ricardo revolutionised trade theory by emphasising relative prices rather than absolute. According to comparative advantage theory, even if one nation is less efficient than the other in the production of all commodities, there is still a basis for mutually beneficial trade. Ricardo's theory became the cornerstone of liberal international trade theory. Comparative advantage theory is one of the most important and most controversial theories in economics. According to Krugman (1998: 35), 'Ricardo's idea is truly, madly, deeply difficult. But it is also utterly true, immensely sophisticated – and extremely relevant to the modern world.' This chapter emphasises the ideological origins of Ricardo's theory of comparative advantage. After a brief exposition of the theory, its criticisms are elaborated. The neoclassical criticism of the theory is presented in chapter three. The

non-neoclassical critics usually focus on the basic assumptions of the theory. It will be argued that even though these critics reduce the relevance of the theory for justifying free trade, they have not been detrimental to its overall validity. This chapter will conclude by discussing those weaknesses of the theory which invalidate it as a policy guide for international trade.

Chapter three analyses the Heckscher-Ohlin theory of comparative advantage. The Heckscher-Ohlin theory is a direct application and a natural extension of neoclassical theory into international economics. It criticises Ricardo's theory on the grounds that it is based on labour value theory, and that it assumes the existence of differences in comparative costs but does not explain them. Heckscher-Ohlin theory attempts to explain these differences based on variations in factor endowments. For some, the Heckscher-Ohlin theory signifies an advancement over Ricardo's theory. The aim of this chapter is to determine whether or not this assertion is valid. First, this chapter will expose the peculiarities of the theory. Second, the empirical evidence will briefly be evaluated. It will be argued that the empirical literature, which usually attempts to predict the pattern of trade by factor endowments, is largely irrelevant in terms of substantiating the validity of the theory. This chapter concludes by questioning the theoretical efficacy of the theory by focusing particularly on the treatment of capital and labour as factor endowments.

Chapter four is divided into three sections. It starts with an analysis of 'dynamic comparative advantage theories'. Even the most convinced adherents of comparative advantage theory admit that, in its static form, the theory has serious deficiencies. The dynamic versions of comparative advantage seek to remove the static nature of the theory by focusing on the future, rather than the current cost structure. This part acknowledges that dynamic comparative advantage theory is an advance over the static version. However, it challenges the assertion that the dynamic version overcomes the major shortcomings of the static version by questioning the assumption that comparative advantage can be made dynamic.

The second section of this chapter critically reviews the literature on trade policies. It aims to clarify the theoretical confusion surrounding the debate over import-substitution and export-promotion policies. These are usually considered to be mutually-exclusive and alternative trade policies. Export-promotion policies are also associated with trade liberalisation. This section postulates that this notion arises from

a narrow and static approach where there are two sectors and all factors of production are employed. It argues that in a dynamic world where the static parameters of the neoclassical model are allowed to change and where there is unemployment, these policies can be seen as complementary rather than exclusive alternatives.

Finally, the last section examines the validity of the so-called 'export pessimism' arguments and their critics. These are probably the strongest arguments used by the protectionists and are often approved by orthodox theorists. As a result, temporary protectionism is accepted as the 'second-best' solution to the trade problem where underdevelopment exists. Most developing countries depend almost entirely on the export of raw materials and agricultural commodities in order to pay for their imports. This is often used as a justification for protectionist policies. It is asserted that the demand for raw materials and agricultural products tends to increase more slowly than the demand for industrial goods. Export pessimism, however, has come under increasing criticism. The critics have argued that not only is the unfolding reality a reason to reject export pessimism arguments, but also export pessimism, in some cases, has turned out to be a self-fulfilling prophecy. The aim of this section is to shed some light on the validity of these contrasting arguments.

Part two analyses the empirical literature on the impact of trade on economic development. It also comprises three chapters. Chapter five critically reviews the empirical literature on the impact of trade openness on economic growth, and prepares the ground for an alternative framework in the next chapter. It questions the validity of many of the empirical assertions of the export-led development thesis. It emphasises the difficulty of measuring openness. Economic openness is usually confused with trade liberalisation. This chapter evaluates the weaknesses of the methods employed in measuring openness. The empirical literature suffers from a number of technical and theoretical weaknesses. Consequently, the majority of empirical works do not provide meaningful evidence to support or reject the export-led development hypothesis. This chapter also focuses on an increasingly popular trade liberalisation index: Dollar's openness index (1991). This index is based on the Hecksher-Ohlin comparative advantage theory and on the idea that trade barriers cause higher prices. Dollar adjusted national price levels with factor endowments and used the differences between the actual and predicted price levels as a measure of trade liberalisation. This chapter questions the validity of Dollar's index as a measure of openness, trade liberalisation or

exchange rate overvaluation. It investigates the supposed association between economic performance and Dollar's index.

Chapter six offers an alternative measure of trade openness and empirically investigates whether trade openness accelerates economic growth. It carries out a formal statistical analysis of the relationship between trade openness and economic growth. It starts by arguing that measuring the impact of outward-orientation on economic performance is a valid exercise. The same cannot be said for trade liberalisation, as the impact of trade liberalisation on trade performance is ambiguous. Once openness is separated from trade liberalisation, a measure of openness can be selected accordingly. This chapter proposes an alternative measure of openness by developing Balassa's (1985) structurally adjusted trade intensity index. This index aims to separate the differences between actual trade figures and trade policy objectives, by adjusting trade intensity according to the structural peculiarities of the countries. Unlike other methods, if properly formulated, this method isolates those other factors influencing trade performance, and indicates the extent of trade openness as a result of conscious policy choices. If all the factors influencing trade performance can be identified and controlled, then what is unexplained can be assumed to be openness by policy choice.

Chapter seven examines the findings of a very controversial World Bank report on Asian's high performing economies. During the 1990s the World Bank came under increasing criticism as a result of the failures of structural adjustment policies and was forced to defend its corner by producing two important reports. Both *The East Asian Miracle* (1993) and the *Structural Adjustment in Africa* (1994) received wide attention. The report on Asia broke the previous neoclassical line and accepted that in these countries, the state intervened heavily in economic policy. Initially, experiences of these countries were used by neoclassical economists to argue that trade-restricting, import-substituting policies had failed, and should be replaced with trade-oriented, export-promoting policies. This line of argument was eventually discredited, and the experiences of these countries were increasingly used against the advocates of trade liberalisation. The report can be seen as a last attempt to defend the orthodoxy. It accepts the presence of industrial policies but argues that they were largely ineffective and thus should not be prescribed for other developing countries. This chapter

examines the empirical findings of the report in order to establish their validity in challenging the effectiveness of industrial policies in the 'miracle' countries.

CHAPTER TWO

CLASSICAL THEORY

2.1. INTRODUCTION

Before the rise of classical economics the dominant economic ideology in Western Europe was mercantilism. Mercantilism was based on the idea that international trade was a zero sum game: a loss for one nation was a gain for another.[1] That is why mercantilists believed in protectionism. With the rise of classical economists, liberal ideology exerted its dominance. Smith's idea of the 'invisible hand' underlined the notion that everybody would benefit from the functioning of the free market. Smith and Ricardo, like all other classical economists, witnessed the rise of a new industrial bourgeoisie and conflict among three dominant classes: the landed aristocracy, the merchant bourgeoisie and the industrial bourgeoisie. The theorists took up the role of spokesmen for the growing industrial bourgeoisie. Therefore, their theories should be seen as a consequence of these real-world developments.

Smith produced the theory of absolute advantage to justify free trade. His theory, however, was unable to explain trade for a country which had no advantage over others. Ricardo revolutionised trade theory by emphasising differences in relative prices rather than differences in absolute prices. The classical economists rejected any form of protectionism in line with the interest of the newly rising industrial bourgeoisie.

In this chapter, first, the ideological nature of Ricardo's theory of comparative advantage will be emphasised. After briefly explaining the theory, critiques of it will be elaborated. It will be shown that, even though most critics have contributed to the debate surrounding the theory, they have not been able to shake the fundamentals of the theory.

The neoclassical theorists' dislike of Ricardian theory[2] led them to retain the basic ideas of comparative advantage theory while rejecting the 'naive' assumptions of labour value theory. They 'revolutionised' the theory by modifying it with the so-called

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[1] Tripathy (1985: 9).

[2] Because it is based on labour value theory.

'factor endowment theory'. An extensive critique of factor endowment theory will be presented in chapter three. The literature, by and large, focuses on the assumptions of the theory. The assumptions are clearly unrealistic and modification of the assumptions changes the implications of the theory to a considerable extent. It will be shown, nevertheless, that this does not invalidate the most fundamental argument of the theory: trade, based on comparative advantage, is beneficial to all the participant countries.

Ricardo's theory, however, is fundamentally flawed once its static nature is identified. It will be argued that a strong critique of the theory can be levelled at its static nature rather than its assumptions and its mechanisms. Because comparative advantage theory is a static theory by its nature, it cannot be a guide to the development process of developing countries. It will be argued that comparative advantage theory, at its best, is a misleading theory. At its worse, however, it can be very damaging to the development attempts of developing countries.

2.2. MERCANTILISM

Before classical theory it was believed that national wealth could be increased by maintaining a continuous trade surplus, minimising imports and maximising exports, thus increasing the national ownership of gold and silver. This theory, known as mercantilism, therefore excluded the possibility of free and equal exchange.

However, these arguments were fundamentally undermined by the free trade theories put forward by the classical economists, the most important of whom were Adam Smith and David Ricardo. They rejected the idea that one nation could enrich itself by impoverishing another for a long period of time and instead argued that trade could only benefit one country if it also benefited another through fair exchange. Thus, Smith wrote that,

> if a nation could be separated from all the world, it would be of no consequence how much, or how little money circulated in it. The consumable goods which were circulated by means of this money would only be exchanged for a greater or a smaller number of pieces; but the real wealth or poverty of

> the country, they allow, would depend altogether upon the abundance or scarcity of those consumable goods. (Smith, 1991: 377)

Nevertheless, as Hudson (1992: 113) notes, the 'laissez-faire doctrine was based on a more static analysis than the development-oriented analysis which characterised the preceding mercantilism and subsequent protectionism'. The Ricardians replaced the increasing returns assumption of the mercantilists with diminishing returns which led them to ignore the dynamic nature of development.

2.3. ADAM SMITH

At the beginning of *Wealth of Nations,* Smith argues that the major source of the difference in the wealth of nations is the extent of the division of labour within each society. He used the famous example of a pin factory and argued that if the various tasks involved in making pins could be divided into distinct operations, this specialisation could be a great source of productivity increase. But then the question is why have not all countries succeeded in increasing their division of labour at the same rate? He believed that the extent of the market could limit the development of the division of labour. This is the main reason why Smith favoured free trade. He wanted markets to be as large as possible, not only in terms of their physical size but also in terms of market relations, to create the potential for exploiting the growing division of labour necessary for productivity increase.[3] That is why he was antagonistic to feudal society and wanted to see the breakdown of the feudal remnants in society. In brief, he saw productivity increase as the result of an increased division of labour and argued that the increased division of labour could be achieved by the expansion of markets.

Smith was very concerned about the possibility of a fall in profitability due to the limitations of the markets. He argued that as capital accumulation continued investment opportunities would eventually be exhausted because of the constraints imposed by the extent of the market. He studied individual sectors and saw that as investment flows into a particular sector, investment opportunities in that sector are gradually exhausted and the profit rate falls. Then he wrongly assumed that what was

[3] This view is very close to what are nowadays called 'dynamic comparative advantage' arguments.

true for a particular sector was true for the economy as a whole. As capital accumulated and investment took place, investment opportunities would eventually be exhausted, and this would ultimately lead to a decline in the profit rate and the economy would gradually decline to a stationary state.

Smith's international trade argument was based on the theory of absolute advantage. It was dynamic in nature compared to Ricardo's static comparative advantage theory in which production costs were assumed to be constant. According to absolute advantage theory, commodities should be produced where the absolute cost of production is the lowest. This would allocate resources efficiently. The theory asserts that the advantage of free trade is derived from purchasing commodities cheaper from abroad rather than producing them more expensively at home. Thus, from this perspective, the international division of labour is the natural extension of the division of labour in domestic markets. This is the main reason why Smith was so enthusiastic about international trade. He saw international trade as a non-zero positive sum game and believed that by expanding the market, trade would create conditions for a deeper division of labour, productivity increase and continuous capital accumulation.

2.4. DAVID RICARDO

Like Smith, Ricardo also approved of capitalism, but unlike Smith, he was pessimistic about its future. Ricardo produced his theory of income distribution between factors of production in order to investigate whether capital accumulation could continue indefinitely. He used the labour theory of value to analyse the distribution of income among capitalists, landlords and workers. This analysis displayed his belief that capitalists were the only source of investment and capital accumulation, whereas landlords, a parasitic class, were the source of luxury consumption.[4] Therefore, the important question was whether or not capitalists received enough income to maintain accumulation.

Even though his reasoning was different, like Smith, Ricardo also believed in a stationary state because of declining productivity in agriculture. Ricardo's application

[4] He assumed that workers were paid wages at a subsistence level.

of the value theory to agriculture differed substantially from his treatment of manufacturing. He argued that as accumulation proceeds, capitalist farmers move from more productive land to less productive land, and the average productivity of land diminishes. This would result in increased rent on more productive land. As agricultural production moves to less and less productive land, the rent on the more productive land would keep increasing. Given a subsistence wage level (which could not be altered), the profit rate would decline as the rent share increased. As capitalist accumulation proceeds, landlords would increasingly take the benefits of production. Thus, capitalist accumulation would stop and the economy would reach a 'steady state'. This theory accounts for Ricardo's antagonism towards landlords.

Pressurised by landlords and labourers, the best that capitalists could hope for was a postponement of the decline in the rate of profit. Ricardo conceived of a number of ways in which this decline might be postponed. One was by the application of new technology to agriculture. But he thought of this as an unpredictable process and not amenable to policy action. The alternative method was to raise labour productivity by intensifying work. However, making labourers work harder was not compatible with the assumption of a subsistence wage.

Once the improvement of British agricultural productivity was ruled out, Ricardo realised that the only way to postpone the decline in the profit rate was to import cheap food. Free trade, particularly for food grains, was a major issue in British politics in the first half of the 19th century. The money price of wheat in England had been steady for a period of about 150 years. At the end of the 18th century, it rose due to restrictions on corn trade. The price was high through the first decade of the 19th century, after which a series of good harvests caused a sharp decline in price. It was in reaction to this sharp fall that in 1815 restrictions on wheat imports (the so-called Corn Laws) were tightened.[5]

Ricardo used his analysis to show that cheap imports of wage goods lowered the labour time embodied in the subsistence wage and thus could permit the rate of profit to be maintained. Furthermore, he suggested that both trading countries would gain from free trade, even if both commodities could be produced in one country with less labour than in the other country.

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[5] For more detail, see Hudson (1992) and Edwards (1985).

This background helps one to understand the ideological nature of Ricardo's comparative advantage theory. He produced this theory as a justification for the abolition of the Corn Laws, which he believed had benefited the landlord class and harmed the industrial bourgeoisie. Ricardo, like Smith, was the advocate of the industrial bourgeoisie against the domination of landlords. This underlying ideological affiliation led to the construction of his theory and resulted in a number of exaggerated assumptions. Diminishing returns on land, for example, cannot be easily supported when one considers the dramatic productivity increase on land, even during his own lifetime. Malthus, a supporter of the landlord class, argued for retention of the Corn Laws which he thought would allow the landlords to invest in land, increase productivity and reduce food prices.[6] 'It is ironic that the theory of economic rent had first been put forth in 1777 by the Scottish agriculturalist James Anderson specifically in reference to increasing returns!'[7] Smith and Marx also based their theories on ever-increasing productivity levels.[8] Consequently, one may wonder whether Ricardo was unable to see the potential for productivity increase on land or whether he preferred ignoring it in order to build his theory.

2.5. RICARDO'S THEORY OF COMPARATIVE ADVANTAGE

Smith's absolute advantage theory looked convincing but trade was impossible when one country produced all commodities cheaper than the other. Ricardo dealt with this problem by developing the theory of comparative advantage. This demonstrated that both countries could benefit from specialisation in particular lines of production even where the costs of production for all of the producers were initially higher in one country than in the other. What was required was for relative prices to differ. Ricardo revolutionised the foreign trade doctrine through a famous example: he compared the effects of the introduction of trade in two commodities between England and Portugal, where each was producing both commodities and the costs of both commodities were higher in England than in Portugal. Ricardo argued that even though the absolute prices of both commodities were lower in Portugal, trade was possible since the

[6] Ironically, when Malthus argued against the 'Poor Laws' which increased the government's budget deficit and annoyed the higher classes, he preferred not to see the productivity increase on land.
[7] Hudson (1992: 113).

relative prices were different. As can be seen from table 2.1, wine is relatively cheaper in Portugal and cloth is relatively cheaper in England.

Table 2.1: Ricardian comparative advantage

	Production per worker (productivity)		Price (£)[9] (inverse productivity)	
	Portugal	England	Portugal	England
Wine	1.25	0.83	0.80	1.20
Cloth	1.11	1.00	0.90	1.00
Wine to cloth ratio			0.89	1.20

Ricardo's model is based on a number of simplifying assumptions. Hudson (1992: 120) summarises these assumptions as follows:

1. Constant returns to scale.
2. The traded goods are produced in both countries.
3. No trade in common factor inputs.
4. No underutilisation of labour, capital or land, and in particular no import-displacement of domestic labour and capital.
5. No emigration or capital outflow.
6. No imbalance in international trade and payments.
7. No impact of monetary inflation or deflation or of domestic and foreign debt on comparative costs.
8. No conflict between private-sector interests and general (long-term) social utility.

To demonstrate the gains from trade, a simplified version of Ricardo's example will be used. Table 2.2 shows that the productivity level and, thus, the price of cloth are the same in the UK and the US.[10] The US, however, has an absolute advantage in wheat

[8] So much so that Marx even completely excluded the agricultural sector from his analysis.

[9] Commodity money (gold), expressed in pounds, i.e., 'in England around Ricardo's time, roughly 1/4 ounce of gold was known as a "pound" (£).' (Shaikh, 1979: 285)

[10] In Ricardo's original example both commodities are cheaper in Portugal than England. Here, for the sake of the simplicity of the graphical demonstration one commodity is kept at the same price level.

production since productivity is higher and the price is lower. The relative prices indicate that wheat is relatively cheap in the US and cloth is relatively cheap in the UK.

Table 2.2: Ricardian comparative advantage (modified)

	Production per worker (productivity)		Price (£) (inverse productivity)		Total production[11]	
	US	UK	US	UK	US	UK
Wheat	1.8	0.6	0.55	1.66	180	60
Cloth	1.2	1.2	0.83	0.83	120	120
Wheat to cloth ratio			0.66	2.00		

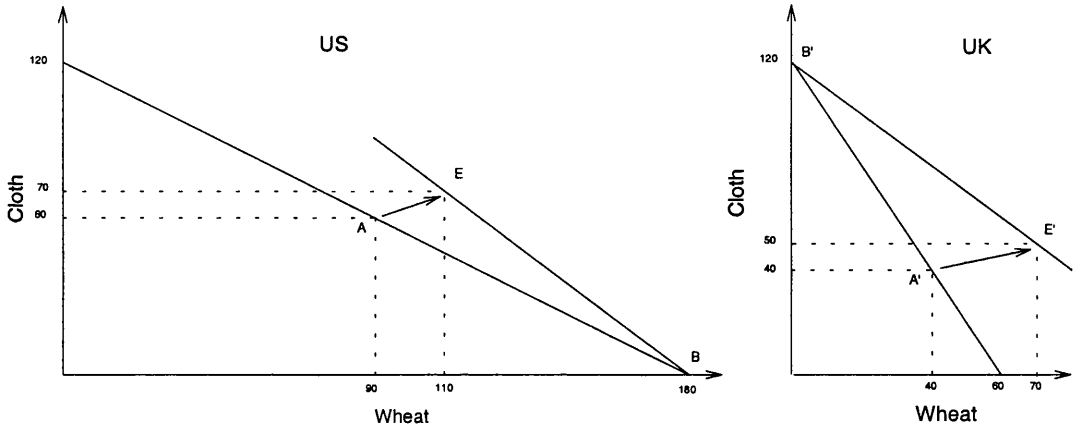
According to absolute advantage theory, there is no case for trade since the price of cloth is the same in both countries and wheat is cheaper in the US. Given these prices, the UK would benefit from importing the cheaper wheat from the US but this is not possible because the UK cannot export to the US. Ricardo argued against absolute advantage theory by demonstrating that if the US produces only wheat, in which it has a comparative advantage, and the UK produces cloth, both countries would gain from trade. Because total production would be higher. The relative price of cloth is cheaper in the UK and the relative price of wheat is cheaper in the US.

A graphical illustration of the gains from trade for both countries is displayed in figure 2.1.[12] In the absence of trade, a nation's production possibility frontier is also its consumption frontier. The production patterns will be determined by domestic consumption patterns and productivity levels. Before trading, the US may choose to produce and consume a combination of the commodities at point A, and the UK at point A'. With trade, the US specialises in wheat and the UK in cloth. After trading, the consumption pattern is different from the production pattern. There will be only one price for both commodities in both countries and relative prices will be the same in both countries.[13] For the US, consumption increases from A to E, for the UK from A' to E'. The total quantity of the commodities (Ricardo's 'sum of enjoyments') is increased. The increased consumption is the result of increased production through specialisation.

[11] When all workers, say 100, are employed.

[12] This example is borrowed from Salvatore (1995).

Figure 2.1: Gains from trade



Given the simplicity of the model and its assumptions, Ricardo believed that:

> Under a system of perfectly free commerce, each country naturally devotes its capital and labour to such employment as are most beneficial to each. This pursuit of individual advantage is admirably connected with the universal good of the whole. [...] It is this principle which determines that wine shall be made in France and Portugal, that corn shall be grown in America and Poland, and that hardware and other goods shall be manufactured in England. (Ricardo, 1992: 81)

Even though various thinkers have developed this model, the basic principles have not changed. Ricardo's labour theory of value has been rejected, but his comparative advantage theory has become the cornerstone of neo-liberal trade theory. The idea that the free market's 'admirable' pursuit of individual advantage will produce the best results for each country became a quasi-religious belief. Influenced by this conviction, contemporary trade theories display corresponding problems and that is why it is worth spending a little more time analysing this model.

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[13] The slope of the BE line is equal to the slope of the B'E' line.

2.6. CRITIQUES OF RICARDO'S THEORY

There are various critiques of Ricardo's theory, from the Marxist left to the neoclassical right. The neoclassical economists accommodate Ricardian comparative advantage theory, but reject its 'hopelessly naive assumptions, particularly its attachment to the labour theory of value and the single-factor assumption.'[14] They have instead developed a 'more sophisticated' model of trade based on factor endowment theory. As will be discussed in the next chapter, far from being a step forward, the theory represents a leap backward in international trade theory. Neoclassical economists not only created confusion through the use of ambiguous concepts (e.g. capital and labour 'endowments'), but also muddled Ricardo's original theory through their confusion over how prices are formed.

Structuralist economists, such as Singer (1984), agree with the basic tenets of Ricardian theory and accept that international trade based on comparative advantage would indeed benefit all participating countries. They argue, however, that these benefits are unequally distributed between developed and developing countries as a result of the peculiarities of the commodities exported by developing countries. They recommend temporary protectionist measures for the industrial sector, until competitiveness is achieved. Their views will be discussed in more detail in chapter four.

One of the strongest critiques of comparative advantage theory has come from the dependency theorists, particularly Emmanuel (1972). He argued that developing countries are exploited at the level of exchange because trade is based on 'unequal exchange'. This unequal exchange, he argued, occurs as a result of the wage and price level differentials between developing and developed countries. Whereas the international mobility of commodities and capital equalises the profit rate internationally, as a result of the immobility of labour, wage rates vary from one country to another according to historical conditions. Low wage levels allow developing countries to lower the prices of their export commodities. In developed countries, however, monopolistic labour and commodity markets keep export prices

[14] Gomes (1987:162).

high. As a result of these different price levels, developed countries transfer some of the economic surplus from developing countries and reduce the latter's accumulation and economic growth rates. This section is concerned with Ricardo and therefore Emmanuel's theory will not be dealt with in more detail.[15]

Carchedi argues that '[t]he theory of international trade and prices is one of the least developed in Marxist economics'[16]. One of the first systematic attempts to analyse Ricardo's theory from the view of radical political economy came from Angwar Shaikh in 1979. Carchedi (1986 and 1991) also criticised the basic logic and internal consistency of the theory. Apart from Shaikh and Carchedi, however, international trade is one area about which classical Marxists have been very silent. Marx himself planned to write a volume on trade, as part of his famous work *Capital*, but because of his death, it was never actualised. In this section, Shaikh's work on international trade and Ricardian theory will be analysed. Carchedi's work will also be briefly evaluated.

The criticisms of Ricardo's theory are mainly levelled at the restrictive assumptions of the model. The critics, however, have not threatened the most fundamental tenets of the theory. Some critics stress the importance of the assumptions and argue that once they are suitably modified the theory loses its explanatory power. This is not necessarily true, as will be discussed later in this chapter.

There is no doubt that Ricardo's theory has serious theoretical weaknesses and that it cannot be used to justify the benefits of free trade to all participants. In this chapter it will be argued that the fundamental weakness of the theory lies in its static nature and its overly simplistic interpretation of labour value theory. The static nature of the model is recognised in the trade literature where there are attempts to create a more dynamic version of the theory. It will be argued in chapter four that 'dynamic comparative advantage' is a contradictory concept. Comparative advantage theory is, by its nature, static and cannot be dynamic.

On the other hand, not all the critiques and indeed theories that allegedly 'improve' the theory have always been fair to Ricardo. He deserves some credit for his contribution to international trade theory for his argument against the theory of absolute advantage. A country can indeed trade based on its comparative advantage.

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[15] Good critiques of his arguments can be found in Edwards (1985), Weeks (1991) and Carchedi (1991).

[16] Carchedi (1986).

Whether this would benefit that country, or whether this trade is the best option open to the country are other matters. Given that the critiques of the theory are not always accurate, it will be argued that Ricardo's contribution should be recognised and credited.

2.6.1. The mechanism

One obvious problem that the model faces is providing an explanation for how an absolute disadvantage can be transformed into a comparative advantage. Given that one country has absolute advantage in both commodities, how is it possible that consumers in that country will be willing to buy goods from the other country? When there is free trade, it is obvious that consumers in both countries would have the incentive to buy both commodities from the first country.

Ricardo produced a mechanism based on the 'quantity theory of money' which purports that when the barriers to free trade are removed, the prices will rise in the surplus country and fall in the deficit country until the deficit country becomes competitive in the commodity for which it has a comparative advantage. Before analysing Ricardo's mechanism, a simpler one that can work under the same assumptions will be considered. At this stage it is important to remember that when Ricardo produced his theory, money was commodity money (gold and silver) and exchange rate devaluations were not possible. The following mechanism is based on the same assumptions of Ricardo.

When free trading starts, Portuguese wine and cloth can both be exported to England. But which one will be first? Merchants will find it more profitable to import wine since the price gap is larger for wine than cloth. If they buy wine in Portugal and sell it in England, their profit rate will be 50 percent. But if they trade cloth it will only be 11.11 percent. So as the wine trade is more profitable than that of cloth, they will start with importing wine. As wine is exported from Portugal to England, the price of wine will rise in Portugal and fall in England. It will rise in Portugal because there is already full employment and the production of wine cannot be increased immediately. But as the price of wine is now higher than its value, it is more profitable to produce wine than cloth. The only way to increase wine production is to remove some of the workers from cloth production and employ them in wine production, which means a

reduction in cloth production. In this case, price of cloth will rise in Portugal since the production and supply is now less than the demand, and the price of wine will fall gradually. If the rise in the price of cloth is high enough, Portugal will start importing cloth from England. Cloth production will increase in England by employing workers that are removed from wine production. This process will continue until the prices of both commodities are equalised in both countries and until Portugal specialises in wine production and England specialises in cloth production.

In this framework it can be seen why the assumptions on full employment and constant technology are necessary for Ricardo's model regardless of how unrealistic they are. Without these assumptions the mechanism that aims to transform the comparative advantage into a competitive advantage would not work.

First, if there is unemployment when the demand for wine increases, wine production in Portugal can be increased without a reduction in cloth production. This means that the price of cloth will not increase in Portugal. After the wine price is equalised in both countries due to free trade, the cloth trade becomes more profitable. In this case cloth production in England will also collapse.

Second, even if there is full employment, the wine producers can invest in new technologies and increase wine production without employing new workers. In this case, again, wine production can be increased without a reduction in cloth production and Portugal will not lose its competitiveness in cloth production.

Ironically, when these assumptions are rejected, there is no winner from this process – at least in the long-run. In the end, England is left with ruined industry and massive unemployment, and has to rebuild everything until the next free trade attempt. Portugal also loses after the collapse of English market because the Portuguese economy now depends on exports to England. Consequently, there will be massive unemployment in Portugal too, unless domestic demand is increased to eliminate the deficient demand due to the loss of external markets.

Shaikh's critique

Shaikh (1979) challenges Ricardo's theory from a Marxist perspective. He argues that Ricardo's mechanism in which comparative advantages become competitive advantages cannot take place. To reiterate, Ricardo's argument (which is based on the

quantity theory of money) purports that, due to a trade deficit (surplus) there will be deflation (inflation) in England (Portugal). These price changes will eventually bring comparative advantage to a competitive advantage by increasing (decreasing) England's (Portugal's) competitiveness in cloth. Average prices in England will fall since the money outflow will reduce the money supply (gold). Prices in Portugal will rise, since the money inflow will increase the money supply. The idea is simple. If the supply of any commodity is higher (lower) than its demand, the price of that commodity will be lower (higher) than its 'direct price' or the price of production until the supply adjusts itself to the demand conditions. The same thing is assumed to hold for the commodity money, gold. Any increase in the supply of gold would reduce its price lower then its direct price. At this point Marx's objection becomes relevant. As Shaikh (1979: 30) puts it, the excess supply of gold is a very different thing from an excess supply of any other commodity since money can be hoarded or transformed into luxury articles without losing its value. In this sense, the commodity money does not have to be (and in fact cannot be) sold. Some quantity of gold is needed in circulation to facilitate the circulation of commodities. The gold which is not needed will be taken out of the circulation in order to be hoarded or transformed into luxury goods.

According to Marx's theory of money, Ricardo's inflation theory is erroneous, in that any increase in the money supply due to a trade surplus will not have any impact on the overall price level. This does not mean that any increase (decrease) in the money supply as a result of a trade surplus (deficit) will not have any impact on the economy. Marx argues that an increase in gold reserves will lower the rate of interest and increase demand in the economy. This is where Ricardo's full employment and constant technology assumptions become important again. When there is extra demand in the economy and production cannot be increased, then prices must go up. But Marx argued that full employment is a vulgar fantasy. When there is unemployment in the economy, extra demand can be met by increasing production. In such a case, quantities but not the prices adjust to the increased demand.

From this perspective, the English/Portuguese trading scenario would be as follows: When trading starts, Portugal exports both commodities to England. Cloth and wine production in England shrinks and expands in Portugal. The constant outflow of money from England reduces the money supply and increases the interest rate which has a further negative effect on production. In Portugal, on the other hand, the

expanded gold reserves increases demand, and production and decreases the interest rate. The excess gold which cannot be absorbed in the circulation of the commodities will be hoarded or used to produce luxury articles. In this model, there is no in-built mechanism to bring about trade equilibrium. England's absolute disadvantage will cause a chronic trade deficit balanced by a persistent outflow of gold, until England runs out of gold reserves and the system eventually collapses.

In a follow-up article in 1995, Shaikh developed his arguments further. In this article, he argues against the idea that when money is paper money rather than commodity money the currency devaluations may transform comparative advantages into competitive advantages. Indeed, Shaikh's above arguments are based on a critique of Ricardo's quantity theory of money. Even if Shaikh is right in his critique, it can be argued that in the contemporary world where money is paper money, devaluations may lower prices in the deficit country and allow competitiveness based on comparative advantage. In the next section, Shaikh's arguments in both articles will be evaluated.

In defence of Ricardo

Shaikh does not criticise the basic tenets of Ricardo's theory. Rather he directs his criticism at the inflation (deflation) mechanism of Ricardo, through which comparative advantages become competitive advantages. The logic of Shaikh's arguments suggests that if one rejects this mechanism, then one has to reject the whole theory. In his view, absolute advantage is the rule for trading, not comparative advantage. If a country does not have an absolute advantage in any commodity, then that country cannot trade since any attempt to trade will destroy its existing domestic sectors.

Shaikh's argument on Ricardo's mechanism and the quantity theory of money is an important contribution.[17] On the other hand, the weakness of Ricardo's mechanism does not invalidate the theory altogether. As will be argued, there is another mechanism whereby comparative advantages become competitive ones even if Ricardo's inflation (deflation) mechanism is not valid. Furthermore, when commodity money is replaced with paper money, a country may face no difficulty in devaluing its

[17] Sau (1982:13) also agrees with Shaikh's argument on the QTM, but argues that '[Shaikh] overlooked the totality of Marx's views on foreign trade, which are far more complex and

currency until some of the commodities (those that are relatively cheaper) become competitive in international markets.

In the following analysis, an alternative mechanism that can work with Ricardo's assumptions will be shown. This mechanism does not need an inflation (deflation) price adjustment mechanism in order to work. Naturally, if there is such a mechanism, Shaikh's critique of comparative advantage theory fails. This mechanism, however, requires interventionist-protectionist policies to bring about the desirable outcomes of trade. In the following example, Ricardo's original static model is employed.

Before free trade, we assume that England has gold reserves. When free trade begins, England will import both commodities (wine and cloth) and the domestic production of both commodities will decline. Until gold reserves are exhausted, prices in England will fall, not because of a reduction in the domestic money supply (an overall deflation as Ricardo would anticipate) but because of cheaper imports. On the other hand, there is no inflation in Portugal as a result of money inflow because in Portugal quantities adjust rather than prices.[18] As England cannot export anything, sooner or later England's gold reserves are exhausted. When the reserves are exhausted, the prices of both commodities will gradually rise towards their pre-trade levels, as imports of both commodities are restricted due to gold shortages. Thus, in this model, as opposed to the quantity theory of money, the first impact of a fall in reserves is not a fall in prices but an increase. When the prices for cloth and wine are high enough, the domestic production of both commodities can start in England again and the prices will stabilise at the pre-trade level. The only difference is that now England has no reserves to import cheaper Portuguese commodities. But as the price of wine increases more than the cloth (because the price gap is bigger for wine), it will be profitable for a merchant to sell English cloth to Portugal below its domestic price and to import cheaper Portuguese wine into England, where it can be sold at a higher price and still make profit.

For example, if we go back to our earlier example (see table 2.1), a merchant starts with £100, buys 100 units of cloth in England, sells them in Portugal for £89

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fundamental. To give a minor example, in Marx's analytical framework there is an adjustment mechanism which in today's jargon would appear close to the Keynesian foreign trade multiplier'.

[18] Here we drop Ricardo's controversial assumption of full employment.

(charges £0.89 for per unit which is lower than the domestic cloth price in Portugal which is £0.9) and makes a loss. With that £89, he buys 111.25 units of wine and sells them in England for £133.5 and makes £33.5 profit.

In this scenario, trade would take place even though there is no inflation (deflation) mechanism involved. At the end of this process, when the profit opportunities for the merchants are exhausted, the prices of both commodities will be equalised in both countries. But what if the cloth producers in Portugal decide to fight back by reducing their prices? Obviously, to eliminate the competition, they can reduce their prices even more since they are more productive. This is not possible, however, in the long-run. For the merchants, there is no limit for a price cut for cloth as long as they make up the difference from the profit they make when they sell wine in England. They make losses because of lower export prices for cloth but they make extra profit because of higher wine prices in England. Cloth producers in Portugal can not compete with this.

As mentioned earlier and as will be explained later in detail, when specialisation takes place, England gains more than Portugal because only a small price undercut for Portugal's cloth producers is required to be competitive. The price fall for wine in England, however, is large. Thus, the relative price change in England is larger than Portugal and England gains more. This scenario implies that Portugal gains from tariffs. As long as the gap in the wine price is still profitable for the merchants, any increase in tariffs will force the traders to reduce cloth prices further to be able to compete in Portuguese markets and the net revenue from tariffs will be the net gain of Portugal. In fact, Portugal can increase tariffs even higher in order to transfer most benefits to itself. Thus, as a rule, an intervention in trade rather than a free market approach would benefit Portugal most.

On the other hand, for this mechanism to work,[19] England's reserves must first be completely exhausted. Otherwise, importing commodities into England will be more profitable. But if England starts with a substantial amount of gold reserves, until the time that all the reserves are exhausted, both sectors in England might be completely destroyed. There will be no sectors to compete even if the prices are high enough again.

This scenario indicates the necessity of controlled trade for England. England must control the cheaper cloth imports, preferably by import restrictions, and Portugal must tax cloth imports, if there is to be some gain for Portugal from this trade.

It is important to note that this model does not require full employment in order to work. As long as relative prices are different, traders will find it profitable to exploit them and comparative advantages will become competitive advantages. In view of the above argument it is reasonable to conclude that there is no case for free trade but there is still a case for controlled trade.

The above mechanism also holds in a world economy where money is no longer commodity money but there exist national currencies. When free trade starts, the domestic prices of both commodities decline in England. The relative price of wine in England declines more because England has a comparative disadvantage in wine production. When foreign currency reserves decline, the prices of both commodities increase back to their pre-trade levels. Now, as the cheaper Portuguese goods cannot be imported as a result of foreign currency shortages,[20] the demand for and price of foreign currency will increase. It is still profitable to sell cloth to Portugal below its actual price in order to obtain the currency and buy the wine in Portugal to sell in England. Shaikh also objects to such an exchange rate devaluation mechanism. He opposes the idea that exchange rate devaluations can induce balanced trade and comparative advantages, as exchange rate devaluations cannot alter the price of exportable commodities in relation to importables (the terms of trade).

Shaikh's argument on the impact of exchange rate devaluations on the terms of trade (Px/Pm) is, of course, valid. Indeed, as he theoretically proves, real exchange rate devaluations would not have any impact on the relative prices of exportables and importables. The relevance of this argument on the trade balance or comparative advantage theory, however, is less clear. The aim of exchange rate devaluations is to change the prices of tradables relative to non-tradables. Indeed, when a currency is devalued, the relative prices of exportables and importables would both increase compared to home goods. Thus, the impact of devaluation is to encourage production of exportables as well as importables and to discourage the domestic consumption of

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[19] As opposed to Ricardo's mechanism where the inflation (deflation) mechanism starts working immediately after trade begins.

both commodities. Obviously, by definition importables refer to commodities that have relatively high costs. Devaluations, thus, are designed to make exportable commodities internationally competitive first. Hypothetically speaking, however, a country may become internationally competitive in all the tradable commodities that it produces by competitive devaluations. Whether this will be beneficial to the economy of that country is another matter. Once the exportable commodities can profitably be exported and trade is balanced, there is no reason to continue with devaluation.

It is obvious that as a result of devaluations a country must export more to be able to import the same amount of commodities in real terms. This is indeed why protectionist and promotionist trade policies could be a better alternative compared to exchange rate devaluations. Such devaluations are the second best option to secure competitiveness, because the cost of not trading would be even bigger.

Let us substantiate these arguments with the following example. For the sake of simplicity, in a country (say Portugal), the pre-trade domestic prices of exportables (P_X), importables (P_M) and home goods (P_H) are assumed to be the same:[21]

$$P_X = P_M = P_H$$

Given this domestic price structure, by definition, the international prices of exportables (P_{XI}) must be higher than importables (P_{MI}).

$$P_{XI} > P_{MI}$$[22]

Before free trade begins, Portugal has an absolute disadvantage in both tradable goods. This means that the domestic prices of tradables, expressed in a common international currency (say in the US dollar - given the prevailing exchange rate ER), are higher than the international prices.

$$ER.P_X > P_{XI} \quad \text{and} \quad ER.P_M > P_{MI}$$

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[20] In this case, England represents the low-productivity developing country and its currency is not internationally accepted.

[21] Which implies the same productivity levels.

[22] Or more correctly: $(P_{XI} / P_X) > (P_{MI} / P_M)$.

When free trade starts, Portugal either must import both commodities and in that case there will be a persistent trade deficit until the exchange rate is devalued,[23] or the producers of both commodities must reduce their domestic prices (P_{X1} and P_{M1}) and therefore suffer from profit losses. If the exchange rate stays constant:

$ER.P_{X1} = P_{XI}$ and $ER.P_{M1} = P_{MI}$

where

$P_{X1} < P_X$ and $P_{M1} < P_M$

As the international price of importables is lower than the international price of exportables, the price of importables would fall more than exportables:

$P_{X1} > P_{M1}$

This would increase the relative domestic price of home goods compared to tradables:

$P_H > P_{X1} > P_{M1}$

If the exchange rate is devalued (ER_1) until the price of exportables reaches its pre-trade level,

$ER_1.P_X = P_{XI}$

The pre-trade price level for importables, however, would be still uncompetitive,

$ER_1.P_M > P_{MI}$ or $ER_1.P_{M2} = P_{MI}$

[23] Note that a fall in the nominal exchange rate (ER) implies a depreciation of the currency.

Thus, the domestic price of importables (P_{M2}) would stay lower than the exportables and act as a disincentive for the domestic producers.

$P_H = P_X > P_{M2}$ where $P_M > P_{M2} > P_{M1}$

As a result of free trade, the producers of importables would become uncompetitive and gradually leave the market. It is important to note that, after specialisation takes place, the domestic relative prices of home goods and exportables would be the same as pre-trade level. The relative price of importables, however, would decline compared to both exportables and home goods. This makes sense. A decline in the relative price of importables would discourage the domestic production of importables. The relative price of exportables and home goods would stay the same, and both would be produced domestically.

Theoretically, the exchange rate could be devalued (ER_2) until when the importables also become competitive. In this case, however, the exchange rate would be 'overvalued'. Producers of exportables would make extra profits (P_X would rise to P_{X2}).

$ER_2.P_{X2} = P_{X1}$ and $ER_2.P_M = P_{M1}$

where $P_{X2} > P_X > P_{X1}$

The above implies that, as free trade takes place, the relative price of importables would change in comparison to exportables and home goods. The relative price of exportables to home goods would stay the same. The first impact of free trade is to change the relative price of tradables or the terms of trade. This is because the international relative prices of tradables determine the domestic relative prices. Once specialisation takes place, however, the terms of trade are fixed and devaluations cannot change them. Devaluations can only change the prices of tradables relative to home goods.

For example, suppose there is inflation in the economy which increases domestic prices. As the international prices of tradables are fixed and externally determined for the producers, the relative price of home goods will increase against

tradables. The profitability for exportables will decline and exporters will become uncompetitive in international markets. This 'overvaluation' of the exchange rate is good for imports as the relative price of imports is now lower. The same is not true for exporters. The lower prices of tradables, although they increase imports by encouraging people to consume more importable goods, they also decrease exports by discouraging the producers of exportable goods. The result is an increasing trade deficit. A devaluation becomes necessary to change the prices of tradables relative to home goods. Once the currency is devalued, the relative price of tradables would increase and the external balance would be restored. The devaluation would increase the relative prices of both tradable goods and by doing so would decrease the demand for importables and encourage the production of exportables. A devaluation influences importables in two ways. First, it decreases the consumption of importables by increasing their relative prices and secondly, if sufficient, it encourages the domestic production of importables. In other words, devaluation has two functions: it promotes exports and substitutes imports. These arguments, of course, go against the conventional views on import-substitution and export-promotion, which will be discussed further in chapter four.

So far it has been argued that, given the simplicity of the model, there is nothing wrong with Ricardo's model. Indeed, the exchange rate mechanism works well to bring about competitive advantages based on comparative advantages. What is wrong, then, with relying on exchange rate devaluations as competitive tools? To demonstrate this one needs to go beyond the simple assumptions of the theory. The criticisms of comparative advantage theory will be covered at the end of this chapter and in the following chapters. Here, the problem of relying on the exchange rate mechanism for competitiveness will be briefly dealt with. Indeed, exchange rate devaluation is not the magical solution to trade imbalances. First of all, as Shaikh mentions, there is the elasticity problem. If the price elasticity of exports is low and the price elasticity of imports is high, the devaluation can only worsen the situation. In this case an appreciation of the exchange rate might be necessary. One related problem is the fallacies of composition argument. If the overall demand elasticity of an exportable item is low, as in the case of agricultural and primary commodities, competitive devaluations among producer countries will only make the situation worse. Third, even though the benefits of having a 'realistic exchange rate' is not a matter of debate,

relying only on exchange rate devaluation is wrong. There might be many cases in which devaluations cannot help. For example, when there is a demand shock for exportable commodities, relying only on exchange rate devaluation can make matters worse. Fourth, devaluations make importable commodities more expensive. As many developing countries depend on the importation of capital goods, this may limit their development. Controls on imports might be a better alternative to devaluations. Fifth, as will be discussed in chapter four in more detail, exchange rate devaluations are non-discriminatory and lead countries to specialise in commodities for which they have a comparative advantage and that may not serve well their long-run development. What countries need to do is to promote specific industries by reallocating some of the surplus from the competitive sectors. Thus, industrial policy, as well as a realistic exchange rate, are necessary to change the current cost structure.

2.6.2. Internal consistency of the theory: Carchedi's critique

Carchedi, a prominent Marxist writer, heavily criticises Ricardo's theory. He argues that Ricardo's theory 'is a non-starter' because it has logical flaws and because Ricardo compares 'uncomparables'. According to him:

> Ricardo's mistake resides in comparing productivities between branches. Portugal, it is said, is more productive in wine than in clothing. This is why it specialises in wine production. The opposite holds for England. But productivity differences can be compared only within branches. In this case they do reflect profitability differentials. Such a comparison is meaningless between branches. It is the comparison of the productivity of wine producers both in England and in Portugal which can be taken as an indication of profitability differentials (and thus of specialisation), not the comparison between the relative productivity of wine and that of clothing in Portugal. (Carchedi, 1991: 220)

And thus,

> [t]here is no reason to assume that wine production is more efficient and thus more profitable than cloth production because it takes 80 hours to produce one gallon of wine and 90 hours to produce one yard of clothing. There is thus no reason to assume that capital in Portugal will move out of cloth and into wine production. It is therefore meaningless to hold that Portugal specialises in wine because Portuguese wine producers are 'more efficient' than Portuguese cloth producers. (Carchedi, 1986: 436)

Finally,

> [t]he fact that, in terms of labour, in Portugal the production of wine costs less than the production of clothing while the production of clothing costs more than the production of wine is a matter of indifference to the capitalists who reason in terms of profitability. Capitalists move to different branches not to save social labour but to increase their profitability. Since there is no reason to assume that, when different branches are compared, labour-saving techniques beget higher profitability, there is no reason either to assume that Portuguese cloth producers will become wine producers. A similar point can be made for the English producers. (Carchedi, 1991: 220)

Carchedi's criticism is hard to grasp and seems to be based on a simple misunderstanding of Ricardo's theory. Ricardo did not compare uncomparables such as apples and pears but compared comparables like price differentials for apples and pears in different countries. Ricardo did not argue that Portugal specialises in wine because Portuguese wine producers are more efficient than Portuguese cloth producers. He argued that Portugal specialises in wine because Portuguese wine producers are 'relatively' more efficient than Portuguese cloth producers. According to his argument, Portugal is more productive in both commodities but it is also relatively more productive in wine production. Carchedi admits that the principle of comparative advantage leads to saving universal labour time, but he argues that this will not lead to specialisation because capitalists are only concerned with their profits and not with saving labour time. This argument is also obscure. It is obvious that capitalists only care about profit and are not concerned with saving labour time to produce

commodities but nobody argues otherwise. The point is that the free trade mechanism makes it unprofitable for Portuguese cloth producers to stay in business since English cloth producers become more competitive through the mechanisms of the theory. The opposite is true for English wine producers.

2.6.3. The assumptions

As mentioned earlier, the assumptions of the theory have attracted most of the criticism. Hudson (1992) has summarised these assumptions and criticised them in detail. This section will not seek to explain all the debates surrounding the assumptions of the theory but it will highlight some of the problems of these criticisms. It will be argued that most critiques (although valid) do not nullify the theory. The theory indeed runs into difficulties as a result of its extreme assumptions. Nevertheless, the basic arguments of the theory, which aim to justify trade based on comparative cost, survive even when the assumptions are relaxed.

One important assumption in the model is constant returns to scale. As a simplifying assumption, constant returns to scale is helpful but it obviously distorts reality. In real life constant returns to scale are not often observed. To drop this assumption, however, in no way invalidates the theory. Neither increasing nor diminishing returns to scale would fundamentally alter Ricardo's arguments.

Partial specialisation is the rule when there are diminishing returns to scale. Increasing returns to scale would in fact strengthen the case for trade. As the new growth theories argue, the total gain from specialisation would be even bigger. Increasing returns to scale, however, would violate the assumption of perfectly competitive markets and require short-term protectionist policies due to the fact that short- and long-term comparative advantages might be different. The modification attempts of the theory under monopolistic markets is extensive and will not be summarised here. The dynamic version of comparative advantage theory, which is based on long-term comparative cost, is nowadays very popular and will be evaluated in chapter four.

However, Hudson's argument that 'increasing returns have steadily widened the cost advantages enjoyed by industrial lead-nations *vis-à-vis* less developed countries'[24] is not particularly accurate. Hudson argues that

> [a]griculture and other primary production in the nineteenth century were characterised by moderately increasing returns while industrial productivity increased by leaps and bounds. [Thus] even if agricultural productivity did not increase, England's production-possibility curve in the Ricardian example would rise in cloth-making. But Portugal, which chose to specialise in wine or other agricultural commodities under the dictates of free trade, would suffer an opportunity cost for not having industrialised. (Hudson, 1992: 123)

The fact that productivity increases more in the industrial sector than in agriculture is not a matter of concern for the Ricardian model. In fact the theory implies that the terms of trade would improve for primary and agricultural commodity producers as a result of the different levels of productivity increase. The prices of industrial products would diminish as a result of high productivity increase whereas the relative prices of agricultural goods would increase. The prices of non-renewable resources would also increase as the supply of such commodities is limited by nature and their demand increases with economic development. As Hudson notes, it is particularly ironic that when Ricardo analysed trade, he neglected diminishing returns on land which was the backbone of the theory he used to argue against the Corn Laws. As was shown earlier in this chapter, however, from the logic of his theory, diminishing returns on land would not act against the agricultural sector because Ricardo argued that an increasing share of total value-added would accrue to landlords. This would reduce the share of profits of the industrial sector as agricultural production moved onto less productive lands. Thus, if anything, specialisation in agriculture would only be more beneficial.

Hudson's above argument implies that if productivity had increased faster in the agricultural sector than in the industrial sector, agricultural producers would have been in a better position. This is not so. In fact if productivity increase in agriculture

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[24] Hudson (1992:122).

had been faster, this would have reduced the relative demand for these commodities even faster and the producers would have been in even greater difficulty.

As will be argued later in this chapter, the real problem with specialising in agricultural products is not that productivity increases slower than in the industrial sector but rather that the agriculture in general is a low skill, low value-added activity and there is a limited and relatively diminishing market demand for the agricultural commodities.

Another important assumption of the theory is that each country can produce the entire range of traded commodities. In Ricardo's example, for instance, England and Portugal can both produce wine and cloth. This is obviously an unrealistic assumption. Thus, Hudson argues that if in Ricardo's example England and Portugal can only produce one of the commodities, comparative advantage theory becomes obscure since '[n]o comparative-cost lines could be constructed if England could not produce wine, and Portugal could not produce cloth.'[25] It may also be the case that England could only produce cloth whilst Portugal could produce both commodities.

This argument against Ricardo's theory, however, is irrelevant. In the first case both countries have absolute advantage in a particular commodity and there is a case for free trade. The relative cost of producing an unproducable commodity in both countries could be seen as infinitely high. In the second case, England has a comparative advantage in cloth production as the relative cost of producing wine is infinite.

Another often-criticised assumption of the theory is related to the idea that only consumption goods are traded. The theory excludes trade in common factor inputs. Thus, Hudson argues that this theory only applies to

> trade in consumption goods not to trade in production goods or raw materials. Ricardo's reasoning would be undercut by trade in capital goods, raw materials or any other production inputs capable either of altering international endowments and productivity. [...] For instance, exporting capital goods would violate his assumption of fixed factor productivity among nations (after all, the

[25] *Ibid.*

purpose of importing machinery is to improve production functions). (Hudson, 1992: 126)

This is an important critique of factor endowment comparative advantage theory. As will be discussed in the next chapter, factor endowment theory predicts specialisation based on factor endowments. If factors of production are internationally mobile, there can be no specialisation based on factor endowments. This critique, however, also does not shake the fundamental logic of Ricardo's theory. Indeed, the post-trade relative cost structure in both countries might be rather different from the pre-trade relative cost structure. As a result of the importation of capital goods, for example, England may become relatively more productive in wine and Portugal in cloth. In this case, England would specialise in wine production even though its pre-trade comparative advantage was in cloth. The reverse is true for Portugal. As long as relative costs are different, there is a case for specialisation and trade based on comparative costs.

The most criticised assumption of the theory is that of the full employment of all resources (labour and capital). There are two reasons for this criticism. First, comparative advantage theory is based on the concept of opportunity cost. Opportunity cost can be defined as the opportunities foregone in undertaking one activity measured in terms of the other possibilities that might have been pursued using the same expenditure of resources. Opportunity cost is based on the assumption of full employment of all resources. For example, the opportunity cost of producing wine for England (Portugal) is cloth (wine) production that has been foregone and which could be more beneficial. If all resources were not fully employed, however, the opportunity cost would be zero as idle resources could be employed in the production of both commodities. That is why, it could be argued, the emphasis should be on how to employ these idle resources rather than on efficiency considerations.

Secondly, the full employment assumption guarantees that there is no employment loss as a result of free trade and specialisation. Labour and capital are assumed to be fully mobile between the sectors and can be shifted from one sector to the other without causing unemployment. It is obviously unrealistic to assume that the wine (cloth) producers in England (Portugal) would move from rural (urban) areas to urban (rural) areas, change their lifestyle and learn the necessary skills to produce cloth (wine). Neither is it realistic to assume that capital is homogenous and can be

transferred from the production of wine (cloth) to the production of cloth (wine). Structural inflexibilities may cause long-term unemployment of factors and may eliminate the benefits of trade.

These critiques are indeed important and damage the free trade idea based on comparative advantage theory. They do not, however, completely invalidate the basic arguments of the theory. First, even though policies to employ unemployed resources might be more important than a gain from static-efficiency through specialisation, there still exists a static opportunity cost when the resources are employed in producing the commodities of which a country has a comparative disadvantage. In the case of England (Portugal) for example, resources would bring higher returns if they were employed in cloth (wine) production than wine (cloth) production. Thus, when less than full employment is assumed, the static-efficiency argument is weakened but not completely refuted.

The immobility of the resources is also a valid critique of the free market arguments but not of specialisation based on comparative advantage. It may indeed be very difficult to shift resources from the production of one commodity to another. However, this transition from more diversified to more specialised production might be a gradual process rather than a rapid one. A country may direct new resources into the production of commodities for which it has a comparative advantage. Thus, even though England (Portugal) cannot remove resources from wine (cloth) production immediately to cloth (wine) production, the production of wine (cloth) could gradually be discouraged and the production of cloth (wine) could be encouraged. The government of England (Portugal), for example, could initially protect the wine (cloth) producers from foreign competition but then gradually reduce this protection to discourage wine (cloth) production. Thus, it can direct new resources into the production of cloth (wine) rather than wine (cloth).

2.6.4. How are the benefits distributed?

In Ricardo's theory, there is a less obvious but very important problem regarding how the extra 'sum of enjoyments' that are created as a result of trade, are distributed between countries. In the model, it is simply assumed that both countries benefit from the specialisation in specific commodities as total production increases. As long as both

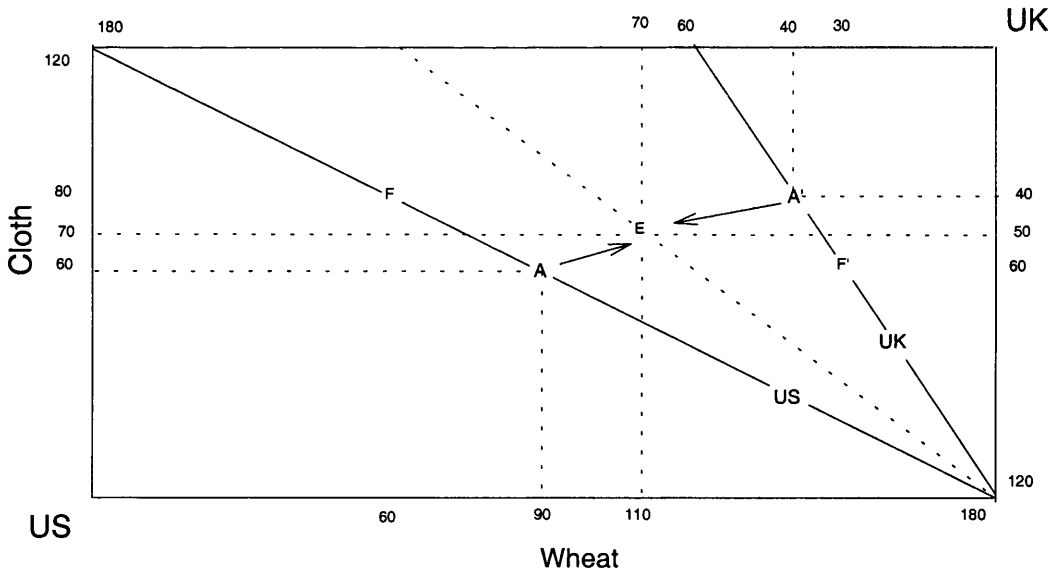
countries benefit, they will be willing to participate in international trade. Their willingness, however, will be very much related to how much they gain from trading. If all or most of the benefits from trade are captured only by one country, the other may not be willing to participate in trade.

The uneven distribution of the benefits of trade can be as a result of several factors. First, the benefits of trade are determined by the extent of the change in the relative prices of tradable commodities. If the relative price of tradables are the same after trade, no gain is attained as a result of trade. As will be shown, the theory implies that trade will mostly benefit a relatively unproductive country. Second, the production patterns after trade as a result of specialisation may not match the consumption pattern and may cause under or over-production.

Distribution of gains

To demonstrate clearly the arguments above, figure 2.1 is reorganised in an Edgeworth box.

Figure 2.2: Gains from trade (reorganised in an Edgeworth box)



In figure 2.2, both countries are plotted into the same figure. The area between the two solid lines represents the possible gains from specialisation and trade. The broken line in the middle represents the relative prices of both commodities in both countries after

trade. As trade takes place, both countries face the same prices for both commodities and move onto this line. The gain from trade for each country depends on where this broken line is placed between the solid lines, as it is determined by the changes in the relative prices of the tradable commodities. The larger the relative price change, the bigger the benefit will be. For example, the UK would benefit more if the broken line was closer to the US's pre-trade relative price line. The same is true for the US. In the figure, point 'E' represents a gain for both countries as they increase the consumption of both commodities. Obviously, the broken line could be anywhere between the solid lines and there are no clear-cut rules to predict where it will be. The determinant factor for the location of the broken line is the policy mix of the two countries.

It is possible that the broken line may be placed on any of the solid lines indicating that one country does not benefit from trade due to a lack of change in relative prices after trade. It is also possible that the broken line may lay not between the solid lines, indicating that one country will lose as a result of trade.

As mentioned before, the logic of the theory suggests that in the absence of any intervention the UK, as the less productive country, would obtain most of the benefits of trade. The broken line would be very close to (or on) the US's pre-trade solid line. Thus the US would not benefit much from trade. The reason for this is as follows.

From the above example it is obvious that a marginal price reduction[26] would be enough to make the UK's cloth competitive as the pre-trade price is same in both countries. This can be demonstrated in table 2.3.[27]

Initially the price of cloth is the same in both countries and wheat is cheaper in the US. When the UK devalues its currency, cloth producers in the UK become more competitive and the UK specialises in cloth production. When specialisation occurs, the UK only produces cloth and the US produces only wheat. As a result of free trade, the prices of the commodities will converge and a single international price will be formed. The international price of wheat will be the same as the US's pre-trade price and the international price of cloth will be marginally less than the pre-trade price in both countries. As the table shows, the relative price fall of wheat in the UK[28] is much

[26] From 0.83 to 0.82 which could be achieved by an exchange rate devaluation.
[27] The first part (pre-trade price level) of table 4 is the same as in table 2.
[28] From 2.00 to 0.67.

greater than the relative price fall of cloth in the US.[29] As a result, the broken line in figure 2.2 will move very close to the solid line of the US. Thus, if we ignore the marginal price change, the US will not benefit from trade. The UK will be the only beneficiary.

Table 2.3: Comparative advantage and the gains from trade

	Price (Before Trade)		Price (After Trade)	
	US	UK	US	UK
Wheat	0.55	1.66	0.55	0.55
Cloth	0.83	0.83	0.82	0.82
Wheat to cloth ratio	0.66	2.00	0.67	0.67

The above argument suggests that the benefits of trade for the US are determined by the extent of the price reduction which is required to make the UK's cloth competitive. If a marginal fall is enough, the US will not benefit much from trade. In such circumstances, one option open to the US is to put a tax on its imports to force the UK to reduce its cloth price further. In fact by using import taxes, the US may force the UK to reduce its prices to the limit where the UK only marginally benefits from this trade. In this case the broken line in the figure would be very close to the UK's solid line. Of course, the UK may retaliate and also put an import tax on wheat.

In this model free trade is more beneficial to a country that has an absolute disadvantage. The other country, therefore, has every incentive to use import taxes to increase its share from this trade. Here, import taxes are not adopted to protect domestic producers but to transfer the benefits of trade. The significance of the above arguments is that international trade is never a smooth process based on mutual benefits but is essentially an unstable process exhibiting fundamental conflicts between countries.

[29] The wheat/cloth ratio increases from 0.66 to 0.67.

Demand side

The composition of demand after trade is another problem that Ricardo's model ignores. Before trade, the production composition of the commodities is determined by the demand composition. In other words, the demand for cloth and wheat determines how much cloth and wheat will be produced in each county.[30] Therefore, there can be no long-term over (under) supply of the commodities. When free trade begins, however, the production composition will be different from the demand composition and this may cause demand and supply imbalances. For example, in figure 2.2, if pre-trade demand and the production composition are on point F for the US and F' for the UK, the total cloth demanded in both countries[31] would be higher than the UK's production capacity[32] and the total demand for wheat would be below the US's production capacity.[33] If there is complete specialisation, the total demand for cloth will exceed total production and the price of cloth will increase which will benefit the UK. The reverse would be true for the US.

The broken line may shift beyond the US's solid line and the US may lose as a result of specialisation and trade. Obviously, there may not be complete specialisation. Since the price of cloth is high, the US may also produce cloth. In this case, however, the US will produce both commodities, and as the relative prices of the commodities will be determined by domestic production costs, the relative prices of the commodities will be the same and the US will not benefit from trade. When the US produces both commodities, there is no gain and no case for trade for the US. Moreover, as the relative demand for agricultural commodities such as wheat declines, the producers of such commodities will find themselves under increasing pressure to withdraw from international trade. This is what many developing countries are facing today.

A more realistic model (i.e., more than two countries) would also not solve this problem. When the demand for cloth is higher than the supply, some countries will shift their production from wine to cloth.

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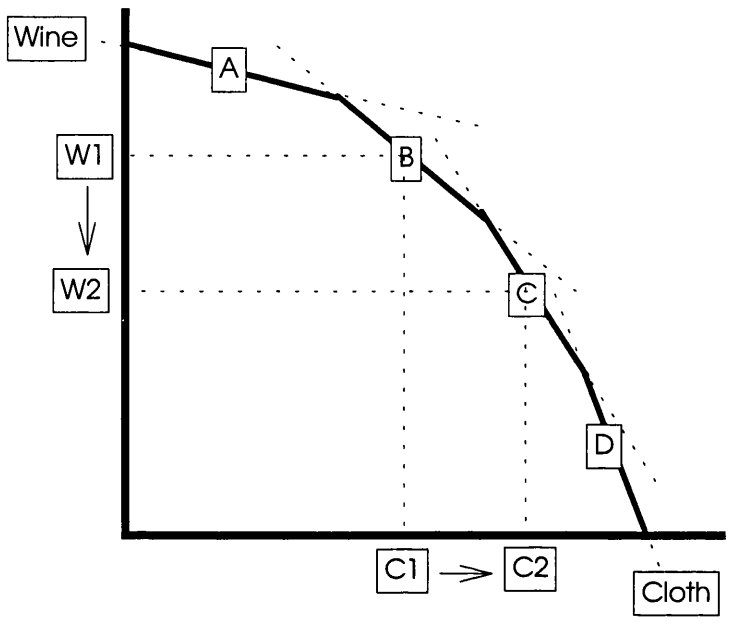
[30] In our example 90 units wheat and 60 units cloth in the US, and 40 units wheat and 40 units cloth in the UK. Total 130 units of wheat and 100 units of cloth in both countries.

[31] Total 140 units. Eighty units in the US and 60 units in the UK.

[32] Which is only 120 units.

[33] Total demand for wheat is 90 units for both countries. Sixty units for the US and 30 units for the UK. The productive capacity of the US is 180 units.

Figure 2.3: Gains from trade with more than two countries



In figure 2.3, there are four countries with different production possibility frontiers. County A is the most productive cloth producer and country D is the most productive wheat producer. Country B is the second most productive cloth producer and country C is the second most productive wheat producer. Country A will produce cloth and country D will produce wheat. Countries B and C will either produce wheat or cloth. According to the demand conditions either B or C will produce both commodities. When the demand for wheat is W1 and the demand for cloth is C1, countries C and D will produce wheat, A will produce cloth and B will produce both wheat and cloth. But when the demand for cloth increases to C2, country C will produce both commodities, whereas country B will produce only cloth.

When demand shifts from wheat to cloth, the price of cloth is expected to be higher as now there is a less efficient producer (average productivity falls as less efficient cloth producer C comes into the market) and the price must be high enough to keep it in the market. On the other hand, if the less efficient wheat producer (country B) does not produce wheat any more, overall productivity will increase and the price of wheat will fall.

When there are three countries with different levels of productivity producing cloth, the most productive one (country A) will benefit the most from trade. On the other hand, country C which produces both commodities does not gain anything from trade because the relative prices of both commodities are the same as the pre-trade prices. In this case, for country C there is no case for trade. Country C, consequently, may decide to withdraw from international trade. If this is the case, however, country B will be the producer of both commodities and there will be no incentive for it to stay in international markets. Consequently, this process leads to the breakdown of trade.

To reiterate, when constant or increasing returns to scale are assumed, complete specialisation is necessary. Partial specialisation would not bring any benefits to a country. When there is complete specialisation, however, mismatches between demand and supply in international markets are quite possible. This mismatches and possible changes in the demand conditions may harm some countries.

2.6.5. Further critiques

So far in this chapter it has been argued that, in its simplest static form, Ricardo's theory of comparative advantage holds out against the criticisms. When the extreme assumptions are modified, the implications of the theory change to a certain extent. As a justification for international trade, however, the theory remains intact. There are, however, two fundamental problems with the theory. The first one is its static nature and the second is its simplistic interpretation of labour theory of value.

A good critique of comparative advantage theory should focus on its static nature. Ricardo's theory is based on a short-term static-efficiency gains through specialisation and 'implies that nations should live permanently in the short-run rather than maximising their productive power over time. This reasoning leaves open to protectionists the reply that the theory of comparative cost does not help build a better bridge to the future but leaves less developed countries stranded in a chronic low-productivity present.'[34] When there is free trade, developing countries may indeed specialise in commodities for which they have comparative advantage as the theory

[34] Hudson (1992: 116).

predicts. This is precisely why they should avoid adopting free trade policies which may not be to their advantage in the long-run.

The problem of the static nature of the theory is well recognised in the literature. The recent 'dynamic' versions of comparative advantage also do not overcome the shortcomings of the theory. As will be discussed in more detail in chapter four, dynamic comparative advantage is a misleading concept since comparative advantage is by its nature a static concept. If today's decisions create future competitiveness, comparative advantage becomes an empty concept.

The second problem with the theory is related to its simplistic treatment of labour value theory. The theory, at the highest level of abstraction, assumes that commodities are exchanged according to their values.[35] In turn, the value of a commodity is determined by the necessary labour time employed to produce it. For example, if it takes two hours to produce one unit of wine and it takes one hour to produce one unit of cloth, then one unit of wine will be exchanged for two units of cloth. This is, however, an abstraction as two different types of labour power are considered as one for simplification purposes. It is simply assumed that one labour hour creates an equal amount of value in wine and in cloth production. In reality, however, this is not true as the different types of labour power have different characteristics. Marx recognises this and explains it in terms of 'complex' and 'simple' labour.[36] According to Marx, '[m]ore complex labour counts only as *intensified*, or rather *multiplied* simple labour, so that a smaller quantity of complex labour is considered equal to a larger quantity of simple labour.'[37] For example, the value created by spending one labour hour in computer engineering is not equal to the value created by spending one hour in shoe-polishing. In reality there are high skill, high technology and high value-added jobs as well as low skill, low-technology and low value-added jobs. Some jobs bring higher income than others, not because there is an unequal exchange between them, but simply because some types of labour power create higher value than others.

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[35] This is obviously a simplification. Commodities are not exchanged for their exact values and their market prices will be modified by different capital-labour ratios, scarcities, skills, monopolies, and tastes. (Fine 1975: 22)

[36] Or 'skilled labour power' and 'unskilled labour power'.

[37] Marx (1990: 135).

From this point of view, it is possible to argue that specialisation will not benefit some countries and will not benefit some individuals. In societies, a division of labour is inevitable and it increases productivity by saving labour time. It is, however, not true that everybody benefits equally from this specialisation. It is probably better to be the worst off doctor in business than the best earning shoe-polisher. From an individual's point of view, it is disadvantageous to specialise in shoe-polishing. In society, some members might be forced to specialise in certain professions. This is not necessarily true for countries. As a result of the division of labour, an individual may have no other option but to be a shoe-polisher. For a country, however, if it was possible to specialise in shoe-polishing would imply being poor forever.

This is not exploitation through exchange (or unequal exchange) but simply wrong specialisation. It is beneficial for individuals as well as countries to try to specialise in commodities that bring long-term benefits. Thus, there is a fundamental conflict in international markets which is similar to the conflict in society. Not all participants in international trade will benefit equally from specialisation in the same way as not everyone will benefit equally from specialising on low value-added jobs. It is the nature of jobs and commodities which determines how one will benefit from specialisation.

In reality, there are various reasons why income from different occupations may vary. The class structure and technological changes can be considered as the two most important reasons. The class struggle over the economic surplus is the basic focus of Marxist theory. On the other hand, new technologies may also create income inequality in the society by skilling and de-skilling the labour force. Increasing computerisation, for example, creates, on the one hand, highly skilled and well-paid professionals, such as computer programmers, and on the other hand, it de-skills some professions such as the cashiers at the checkout who are poorly paid.

The above argument implies that it is simply wrong to specialise in low-skill, low-technology and low-income commodities. It is also wrong to specialise in commodities for which there is no future demand. Individuals as well as the countries which specialise in commodities that are not and will not be demanded will suffer as a result of this specialisation. Consequently, what matters is not specialisation itself but the commodities in which individuals and countries specialise.

2.7. CONCLUSION

This chapter argues that in its simplest static form Ricardo's comparative advantage theory is fundamentally correct. Most of the criticisms that focus on the assumptions and the mechanism of the theory, make valid arguments and contribute to the debate considerably. They are unable, however, to invalidate the theory totally. Ricardo's comparative advantage theory rightly pointed out that a country can trade and benefit from trade even if it does not have an absolute advantage in any of the tradable commodities in terms of the necessary labour time employed to produce them. The question is not whether under free trade countries specialise in commodities for which they have a comparative advantage but rather whether they will benefit from this specialisation in the long-term. The static gains in the short-term might completely be eliminated by specialisation in the wrong commodities in the long-run. Moreover, static-efficiency gains can be negligible when the dynamic nature of development is taken into account.

In its static form, when all the parameters are fixed and assumed to be constant, specialisation according to Ricardo's model makes sense. It is also true that developing countries indeed gain more from trade in Ricardo's static approach. Trade is a good option compared to complete autarchy. Exporting primary commodities in order to import manufactured commodities might not be the most desirable situation but in the absence of domestic capacity to produce manufactured commodities, not to trade is an even worse option. The consequences of not trading are severe as developing countries are dependent on imports for domestic production. If all international trade stopped suddenly, developing countries would probably suffer more than developed countries.

This, however, means neither that free trade will benefit all countries equally nor that developing countries should accept the rules of comparative advantage and specialise in primary commodities. The theory is wrong in asserting that trade liberalisation and the free market are the best mechanisms for trade and that all participants gain from free trade. If we assume that developing countries are unable to produce certain commodities, trade will benefit them more. If trade and specialisation prevents developing countries from industrialising, however, trade is a bad option for developing countries.

The real difficulty with the theory is that it is static, it ignores the distribution of the static benefits of trade, and it is based on a rather simplistic interpretation of labour value theory. The static nature of the theory completely nullifies the basic arguments of the theory and the attempts to remove its static nature are bound to be unsuccessful. The theory of comparative advantage is essentially a static theory. The theory also ignores the possible distributional conflicts between countries regarding the static gains from trade. It wrongly assumes that all countries benefit equally from trade and that there is no conflict between them. When this assumption is dropped, however, there is room for a more realistic case where countries struggle with each other to maximise their own benefits. And finally, the theory interprets labour value theory in a simplistic way and assumes that all participants benefit from the division of labour. This assumption is wrong not only for specialisation at the international level but also specialisation at the national level.

Thus it can be concluded that comparative advantage theory is a very misleading theory and that specialisation based on comparative advantage may seriously damage the development process of a country. What developing countries need is to develop competitiveness in certain commodities that bring long-term benefits by employing industrial policies, including protectionist trade policies.

CHAPTER THREE

THE HECKSCHER-OHLIN MODEL

3.1. INTRODUCTION

For Ricardo, mutually beneficial trade between two countries was possible because of the differences in pre-trade relative commodity prices which resulted from differences in labour productivity. The neoclassical critiques of Ricardo, however, argued that he not only failed to explain the reasons for different productivity levels in different countries, but also he wrongly assumed that labour was the only factor of production. Factor endowment theory seeks to explain not only the reasons for or causes of the differences in relative commodity prices by factor endowments of the countries but also the effect of international trade on those factors of production. For some, the Heckscher-Ohlin theory[1] is the greatest contribution to international trade theory as it explains comparative advantage rather than assumes it.[2] The theory was later 'improved' by Paul Samuelson[3] who argued that not only would free trade based on factor endowments benefit two trading countries through increased production and consumption, but also it would equalize the factor prices.

In this chapter it will be argued that, far from being a step forward, Heckscher-Ohlin theory marks a leap backwards in international trade theory. Even though Ricardo failed to produce a consistent mechanism to show how trade between two countries is actualised and how the alleged benefits of trade are distributed, he persuasively pointed out the possibility for trade between two countries even if one of them produces both commodities cheaper than the other. Thus, the accuracy of his

[1] In 1919 a Swedish economist, Eli Heckscher, published an article entitled, *The Effect of Foreign Trade on the Distribution of Income*. The article was hardly noticed until another Swedish economist, Bertil Ohlin, a former student of Heckscher, published his famous book *Interregional and International Trade* in 1933 which brought him a shared Nobel Prize in 1977. Since Ohlin's arguments were based on Heckscher's article, the theory is called Heckscher-Ohlin theory.
[2] Salvatore (1995: 120).
[3] He won the Nobel Prize for Economics in 1976.

perception deserves some credit. Moreover, the supposed contribution of the Heckscher-Ohlin theory in explaining trade patterns between capital-scarce (low-income) and capital-abundant (high-income) countries is flawed since, as will be argued, the Ricardian model would also predict the same pattern of specialisation.

The Heckscher-Ohlin theory is a direct application and natural extension of neoclassical analysis to international economics and suffers from all of its well-known deficiencies. The inability to grasp the basic tenets of the labour value theory led neoclassical theorists to deny Ricardo's theory[4] and replace it with a general equilibrium model. The production of the theory was largely driven by an ideological imperative: their dislike of the labour theory of value.[5] Their urge to distance themselves from Ricardo's theory was so great that Ohlin even refused to use the phrase 'comparative advantage'.[6]

While criticising the classical labour value theory, Ohlin reminds us that to analyse the complex reality '[s]implifications are often appropriate and necessary. But they ought to be of such a nature that they can be dropped successively as we approach ever closer to reality.'[7] The assumptions of a theory must also be justified before they are introduced. They must simplify the reality but not distort it. Unfortunately, Ohlin fails to justify his most central assumptions, particularly those related to the nature of capital. Heckscher and Ohlin seem to make assumptions to guarantee desirable outcomes, rather than for analytical or simplification purposes, which cannot be justified. In this chapter, the implicit and explicit assumptions of the Heckscher-Ohlin factor endowment theory will be challenged by emphasising its treatment of capital and labour.

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[4] A typical critique of the labour value theory is that it supposedly assumes only one factor of production whereas the Heckscher-Ohlin theorem 'admits the relevance of more than one factor' (Mookerjee, 1958: 7). The absurdity of this accusation requires no clarification for someone who is familiar with the theory at an intermediate level.

[5] 'Much of the driving force behind the critique of Ricardo and the development of neoclassical thought was an attempt to head off the radical interpretations of Ricardian theory by socialists, particularly Marx and the Marxist tradition. (Bliss, 1975, ch. 5)' in Evans (1989: 78).

[6] Gomes (1990: 114).

[7] Ohlin (1991: 202).

3.2. THE HECKSCHER-OHLIN COMPARATIVE ADVANTAGE THEORY

3.2.1. The theory

Like the Ricardian model, the Heckscher-Ohlin model is also based on a number of very controversial assumptions:

1. Commodities are freely mobile internationally.
2. All countries use the same technology in production.
3. Factors of production are mobile domestically but immobile internationally.
4. Tastes are the same in all countries.
5. There are no scale economies.
6. There is perfect competition in all markets.
7. There are no transportation costs.
8. All resources are fully employed.
9. Countries have different factor endowments and thus factor prices. Factors of production are fixed and cannot be altered.

Given these assumptions, the theory asserts that 'a nation will export the commodity whose production requires the intensive use of the nation's relative abundant and cheap factor and import the commodity whose production requires the intensive use of the nation's relatively scarce and expensive factor.'[8] This means that the relatively 'labour-rich' nations will export the relatively labour-intensive commodities, since the wage rates are relatively lower, thus labour-intensive commodities can be produced cheaper. Similarly they will import the relatively capital-intensive commodities, since capital is relatively more expensive and production of capital-intensive commodities will be more costly. As the theory is based on different relative factor prices, the reasons why different countries have different factor prices become the core issue in Heckscher-Ohlin theory.

The theory simply asserts that under special assumptions, the relative prices of these two special commodities (capital and labour) are determined by their relative

supplies. But what determines their relative supplies then? The answer lies in the concept of endowment. Since all countries, the theory argues, are endowed with different quantities of factors of production (such as natural resources, land etc.) and since these endowments are naturally determined, countries will employ the best combination of these factors to produce commodities in the most efficient way. If we focus on the most important factors, namely labour and capital, it is obvious that different countries have different capital and labour endowments. Some countries are endowed with more machinery (capital) than others. To determine if a country is capital or labour endowed (or abundant) we need to look at their comparative availability, namely capital-labour ratios. If one country has a higher capital-labour ratio compared to another, that country is endowed with capital, in other words it is capital-abundant.

This last point, however, requires further clarification since the capital-labour ratio can be defined in two different ways: in physical and in value terms. The ratio in terms of physical units considers only the supply of factors (availability of capital and labour) whereas the same ratio in terms of value considers their prices, that is, demand conditions as well as supply conditions. Since the demand for capital and labour is assumed to be derived demand, namely determined by the demand for the final commodities that require their use, the price of a factor of production might be relatively high even though its supply is relatively abundant if the demand for the commodity that uses that factor of production more intensively is relatively high. In other words, if the demand for a labour (capital) intensive commodity is high, the price of labour (capital) might be high even if it is the abundant factor of production. In this case a country could be considered labour-abundant in terms of the physical definition of capital and capital-abundant in terms of the value definition of capital. To solve this difficulty, tastes and demand preferences are assumed to be the same in both countries so that the physical and value definitions of capital indicate the same level of abundance.

[8] Salvatore (1995: 118).

3.2.2. Factor-price equalisation

Samuelson argued that if the Heckscher-Ohlin theory was true, then when international trade, based on the factor endowment, takes place, the prices of the factors would converge and would gradually be equalized in both countries; relatively and absolutely. In this respect the theory purports that international trade has the same effect as the international free mobility of factors. The factor-price equalization theorem (also called the Heckscher-Ohlin-Samuelson theorem) holds only if Heckscher-Ohlin theory is proven to be true. As one country specializes in the production of labour (capital) intensive commodities and reduces its production of capital (labour) intensive commodities, the relative demand for the labour (capital) and the wage rate (interest rate) rises, and the demand for capital (labour) and the interest rate (wage rate) falls. Trade possibilities are exhausted when relative and absolute prices of the factors are equalized between countries.

As the relative and absolute prices are equalized, wages (interest rate) in the labour-abundant country rise (fall) and the wages (interest rate) in the labour-scarce country fall (increase). That is why in a labour-abundant country, workers would be in favor of international trade whereas capitalists would be against it. The opposite would be true for the capital-abundant country. Thus the Heckscher-Ohlin-Samuelson model introduces some sort of peculiar class relationship into trade theory, since not all classes will benefit equally from free trade. For example, workers in labour-abundant developing countries will benefit, and capital will lose as a result of a fall in the profit rate. The reverse is true for capital-abundant developed countries. Thus, capital in developing countries and labour in developed countries may object to trade liberalisation.

3.2.3. Predicting the trade pattern

The Heckscher-Ohlin-Samuelson model not only attempts to predict the current pattern of trade under free trade conditions but it also attempts to predict dynamic structural change in the long-run. 'The dynamic comparative cost theory of Johnson (1968) is a synthesis of the static neoclassical Heckscher-Ohlin theory and several alternative theories, particularly the theories of the technology gap and the product

cycle.'[9] According to the theory, the sectors involved in labour-intensive production are the natural candidates for growth in low-income countries. As specialisation takes place and the production of labour-intensive commodities increases, however, the demand for and the price of the abundant factor of production (labour) will gradually increase and those countries will gradually lose their comparative advantage in labour-intensive commodities. Thus they will gradually move to the production of more capital-intensive techniques and commodities.[10] A number of Asian countries, particularly Korea and Taiwan, can be given as examples of such a shift in comparative advantage.[11]

3.3. EMPIRICAL EVIDENCE

As will be discussed in the next section, the theory has serious theoretical problems with its most fundamental assumptions. The literature, however, is dominated by research on its empirical validity to predict trade patterns. Puzzled by the overwhelming failure of the empirical works to support the theorem, researchers, for decades, have tried new methods to find a solution. Some found the solution in relaxing its 'minor' assumptions and making the theory more complicated in various ways. Few, if any, questioned the basic tenets of the theory. Here we will first summarise the simplest but most powerful empirical evidence which denies the expectations of the theory. Then, we will argue that even if the empirical literature supported the expectations of the theory this would not prove its validity.

There are two predictions of the Heckscher-Ohlin-Samuelson theory. First, relatively capital (labour) abundant countries would export capital (labour) intensive commodities. This implies that trade possibilities are greater between countries which have dissimilar factor endowments.[12] Thus one would expect most trade to be between

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[9] Gunasekera (1992: 47).

[10] Anderson and Smith (1981: 296).

[11] See Song (1996) and Gunasekera (1992).

[12] If two countries have the same relative factor scarcities 'and the same techniques, both countries will have the same comparative costs for all goods' [Heckscher (1919) in Mookerjee (1958: 7)], thus trade will not be beneficial to the countries. In fact, Ohlin purposefully used 'interregional' rather than international trade in his arguments since he thought that if the assumption on the immobility of factors of production is relaxed and replaced by 'less than perfect mobility', factor endowments would be more dissimilar between different regions since he defined regions in such a way that 'an

labour-abundant low-income countries and capital-abundant high-income countries. Second, as free trade takes place and countries specialise in particular commodities according to their factor endowments, the factor prices would be equalised internally as well as internationally.

These predictions of the model have come up against the facts of history.[13] First, trade flows are greater among the high-income countries than between the low- and high-income countries. Second, the famous 'Leontief Paradox' contradicted the factor-intensity criterion of the theory. Third, there is no evidence of factor-price equalisation. In the face of the failure of empirical works to confirm the expectations of the Heckscher-Ohlin-Samuelson theory or its variants, how are we to interpret this theory?

Proponents of the theory agree with the opponents that there are problems with the basic assumptions of the theory. For example, there are more than two factors of production, countries use different technologies, markets are not perfectly competitive, there are transportation costs, barriers to trade do exist, etc.[14]

Under these circumstances, advocates of the theory, however, argue that, 'it is more realistic to say that international trade has reduced, rather than completely eliminated, the international difference in the returns to homogeneous factors.'[15] Another line of argument is that 'even if international trade has operated to reduce absolute differences in factor returns among nations, many other forces were operating at the same time, preventing any such relationship from becoming clearly evident.'[16] Even if differences in factor prices increase between rich and poor countries, this would still not 'disprove the factor-price equalization theorem, since in the absence of trade these international differences might have been much greater than they are now.'[17]

This argument cannot be won against the proponents of the theory. Bertrand Russell once said that; 'Man is a credulous animal and must believe something. In the

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interregional transfer of factors of production is much more difficult than an intraregional one'. (Ohlin, 1991: 114).

[13] Sau (1982: 12).

[14] A number of subsequent studies developed the Heckscher-Ohlin model theoretically and empirically. See Song (1996) and Martini (1996) for literature surveys of these new developments.

[15] Salvatore(1995:129).

[16] *Ibid.*

[17] *Ibid.*

absence of good grounds for belief, he will be satisfied with bad ones.'[18] One may wonder, what the purpose of such an empirical work is if we are not able to reject the theory regardless of the results. A quasi-religious and unshakeable belief saves the theory against all possible outcomes.

Empirically, the factor endowment theory has been rejected repeatedly and, as Trefler (1995) argues, 'rightly so: it performs horribly. [The theory] correctly predicts the direction of factor service trade about 50 percent of the time, a success rate that is matched by a coin toss.'[19] Factor endowment theory, however, apparently has an incredible hypnotic effect on neoclassical economists. The logic is simple: the Heckscher-Ohlin-Samuelson model does poorly, but as 'we do not have anything that does better',[20] we should stick to it.

3.3.1. Factor-price equalisation

One of the core premises of the Heckscher-Ohlin-Samuelson theory is that the factor prices will converge through free trade. The gains from trade expansion accrue to the abundant factors and the scarce factors will be worse off. The relative price of the abundant factor will increase as the demand for it will increase through specialisation based on the abundant factors of production. The wages in labour-abundant countries and the profits in capital-abundant countries will rise relatively.

In reality, this scenario fails completely. Prices of factors of production have not converged.[21] The empirical evidence on the liberalisation of trade on wages is at best mixed. A number of empirical studies have found no evidence of an increased share of wages in low-income countries. There seems to be no meaningful correlation between trade and factoral income distribution.[22]

A simple observation of the share of wages in total value-added in the industrial sector sheds further doubt on the theory. Table 3.1, for consecutive five-year time

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[18] Bertrand Russell, Unpopular Essays, 1950.
[19] Trefler (1995: 1029).
[20] Bowen *et al.* (1987) cited in Trefler (1995: 1030).
[21] Those who have observed the enormous differences between the wages of similar types of workers in developed and developing countries have rejected factor-price equalisation. See Bliss (1989), Leamer (1984), and Wood (1994).
[22] See Edwards (1997a), Davis (1996), Michaely, Papageorgiou and Choksi (1991), Bourguignon and Morrisson (1991), Krueger (1978), Bhagwati (1978).

periods, reports the change in the share of wage. As the table shows, during the 1980s, when there was widespread trade liberalisation almost everywhere in world, the share of wages declined in most countries.

Table 3.1: Change in the share of wage in total value-added in the industrial sector

	Number of countries			Percent	
	Increase	Decrease	Total	Increase	Decrease
1965-70	20	33	53	38	62
1970-75	37	37	74	50	50
1975-80	39	41	80	49	51
1980-85	30	51	81	37	63
1985-90	19	47	66	29	71

Data Source: World Bank Stars Database
Note: See table A3.1 for the countries employed. Number of countries is determined by data availability.

Moreover, the following simple regression between a change in the share of wages in total value-added (Δ[W/VA]) and a change in the trade ratio (Δ[X/GDP]), from 1980 to 1990, suggests that the impact of trade on wages is negative (but insignificant). More importantly, dummy variables for income groups in the regression reveal an interesting picture. Contrary to the expectations of the theory, dummy variables for low- and middle-income countries have a negative sign, and a dummy variable for high-income countries has a positive sign. Dummies for middle- and high-income countries are significant at the ten-percent level. This admittedly simple regression casts doubt on the basic premises of the theory. Trade seems to have a positive impact on wages in high-income countries and a negative impact in middle- and low-income countries.

Δ[W/VA] = f (Δ[X/GDP] + low-income + middle-income + high-income)				
	-0.022	-0.011	-0.129	0.139
	(-0.238)	(-0.142)	(-1.911)*	(2.063)*
R-bar-squ: 0.094				
F : 2.296				
DF : 59				

Data Source: World Bank Stars Database
Note: T-statistics are in brackets. Asterisks mean significant at ten-percent level. Variables are in logarithmic form for a better fit. See table A3.1 for the countries employed. Number of countries is determined by data availability. Countries are classified according to World Bank criteria. The low-income economies are those in which 1993 GNP per capita was $695 or less; middle-income economies are those between $695 and $8,625; and the high-income economies are those above $8,625.

If there is any correlation between trade liberalisation and factor prices, evidence should come from the European Union since trade among the European Union members has been liberalised considerably.

Table 3.2: Factor-price equalisation, evidence from the European Union

	Coefficient Of Variation (W/VA)	Coefficient Of Variation (W/L)	Trade Ratio (X+M)/GDP
1967	15.8	40.2	30.5
1970	14.9	40.3	35.5
1975	15.8	38.6	41.6
1980	16.8	36.3	47.4
1985	18.9	33.9	52.0
1990	24.4	31.8	46.4

Data Source: World Bank Stars Database

Table 3.2 also provides no evidence for the existence of such convergence. The first column shows the coefficient of variation for the share of wages in value-added (W/VA) for 15 European Union countries. The second column is the coefficient of variation for real wages and the third column shows openness in terms of the trade intensity for the same countries. The second column indicates the convergence of real wages. This, however, cannot be interpreted as evidence which supports the theory. According to the theory, through free trade, in labour-abundant countries the share of the wages must increase relative to profits and in the capital-abundant countries it must

decline. Thus, one would expect convergence in the share of the wages in total value-added. The data, however, indicate just the opposite of what the theory predicts. Except between 1967 and 1970 (when there is a fall), the coefficient of variation increased considerably. Openness also increased consistently up until 1985 and then it fell between 1985 and 1990. This suggests that if there is any relationship between trade liberalisation and wages, it must be a negative one. In other words, the wage gap among countries widens as liberalisation takes place.[23]

3.3.2. Trade between developed and developing countries

The theory implies that the trade between developed and developing countries should increase faster than either trade among developed countries or trade among developing countries since the alleged benefits of trade are greater when factor endowments are dissimilar. Further, the theory predicts that developing countries would increase their agricultural exports to developed countries since their comparative advantage lies in labour-intensive commodities such as agricultural or primary products. These claims of the theory, however, cannot survive an examination of the simplest facts.

Table 3.3 shows the share of intra-group trade among developed and developing countries respectively. Contrary to the expectations of the theory, both developed and developing countries increased trade among rather than between themselves. In other words, developed countries trade more with developed countries and developing countries trade more with developing countries.

[23] Using available data from 1967 to 1990, a regression was estimated to test if the coefficient of variation for the share of wages in value-added is correlated with openness and no significant

Table 3.3: Intra-group trade among developed and developing countries

	Share of exports from industrial countries to industrial countries (percent)	Share of exports from developing countries to developing countries (percent)
1958	60.2	23.5
1960	62.6	24.1
1970	67.5	21.7
1980	67.5	27.6
1990	76.3	35.8
1995	70.5	43.3

Source: IMF, Direction of Trade Statistics Yearbook

Table 3.4 shows agricultural export-import ratios for developed and developing countries. The table illustrates a clear trend, which runs counter to the predictions of the theory. Developed countries were net importers of agricultural commodities during the 1960s while developing countries were net exporters. This has changed gradually, however. In the 1990s, developed countries were close to becoming net exporters of agricultural commodities (the European Union, for example, exported more than it imported in 1993) whereas developing countries have become net importers.

Table 3.4: Net agriculture exports: (X/M)*100, by region and income group

	DEVELOPED COUNTRIES	EUROPEAN UNION	DEVELOPING COUNTRIES	SUB SAHARAN AFRICA
1960	69	42	190	337
1970	71	55	180	313
1980	87	76	106	143
1990	89	92	104	132
1993	94	101	96	103

Source: FAO, Agrostat Data Base

All of the above evidence is based admittedly on simple observations. This, however, does not reduce its validity, since the basic predictions of the theory are very clearly stated.

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correlation was found.

3.3.3. The Leontief paradox

In 1951, Leontief was the first to test the Heckscher-Ohlin theory by using US trade data. As the US was the world's most capital-abundant country, he expected that its exports (imports) would be capital (labour) intensive. He estimated the capital-labour ratio for US import-substitutes, rather than for the imports because foreign production data on actual US imports were not available. Obviously, imports would be more appropriate than import-substitutes, nevertheless if the Heckscher-Ohlin model is true, then import-substitutes should have been more labour-intensive than exports.

The results of Leontief's test showed that US import-substitutes were about 30 percent more capital-intensive than US exports. That is, the US seemed to export labour-intensive commodities and import capital-intensive commodities. This was the opposite of what the Heckscher-Ohlin model predicted. Leontief himself and his followers tried to rationalise the "paradox". Leontief first argued that the US was, in fact, labour-abundant, since productivity of labour was three times higher than the rest of the world and thus the US labour force had to be multiplied by three.[24] This argument was later withdrawn, since US capital was also at least three times as productive as foreign capital. After numerous attempts and the introduction of many different techniques, finally by including "human capital" in total US capital, Kenen (1965) 'resolved' the paradox.[25] However, the most comprehensive empirical study to solve the Leontief paradox was done by Leamer (1984) using the Heckscher-Ohlin-Vanek[26] version of factor proportion theory. In this study, Leamer created ten aggregate export categories[27] and eleven endowment categories[28] and tried to establish a link between resource endowment and the trade pattern of a country. He claimed that cross-country differences in factor endowments play an important role in determining patterns of international trade.

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[24] Salvatore (1995:132).

[25] See Salvatore (1995:134) and Gomes (1990: 123-131) for the details of the various empirical works that have been done to resolve this 'paradox'.

[26] Heckscher-Ohlin-Vanek is based on the factor content of trade rather than commodities. See Leamer (1984) and Song (1996).

[27] These are petroleum, raw materials, forest products, tropical products, animal products, cereals, labour-intensive manufactures, capital-intensive manufactures, machinery and chemicals.

[28] These are capital, three types of labour, four types of land, coal, minerals and oil.

3.3.4. The relevance of the empirical works

The Leontief paradox itself, of course, is important and questions the validity of the theory.[29] What is perhaps more important, however, is the logic and analytical validity of such exercises. Empirical results, unless justified and supported with an accurate theoretical framework, do not provide meaningful results. One may get the 'right' results with the 'wrong' reasons. An important question still remains unanswered: can the Heckscher-Ohlin model properly describe the real world?

The advocates of the theory mistakenly believe that if they can find a way to prove that the theory can predict trade patterns, this would confirm the validity of the theory. This is not necessarily so. The comparative advantage theory is not about an anticipation of trade patterns (in the short- or in the long-run), but about promoting economic development through free trade and specialisation. Thus, even if the empirical results confirmed the expectations of the theory this would still not prove the proposed benefits of either free trade or specialisation. Therefore, as we will argue, the testing of the Heckscher-Ohlin theory empirically is a hopeless task.

First, under free trade conditions, low-income countries may indeed specialise in labour-intensive, primary and agricultural commodities, for which they allegedly have a comparative advantage. This specialisation, however, may not serve their interests in the long-run. This is precisely why they should not confine themselves to following their comparative advantage but rather, they should try to create their own competitiveness in other commodities.

Second, there might indeed be some similarities between a country's trade pattern and its 'endowments'. As exported commodities are part of total national production, their peculiarities will somewhat reflect the overall peculiarities of the total economy. For example, if a country has a highly skilled labour force, it is only normal that this country will export commodities that require skilled labour. Or, to put it other way round, if a country is exporting commodities that require a highly skilled labour force it must have a highly skilled labour force. A commodity that requires skilled labour cannot be produced and exported without a skilled labour force. This is no

better than predicting that someone who has medical training will be likely to practice medicine or that someone practising medicine must have medical training. What the theory is advising to low-income countries is that since they do not have training in medicine, they should work as street sweepers rather than focus on getting a medical education, since their comparative advantage lies in street sweeping.

Departing from a possible correlation between a country's exports and its endowments and claiming that this supports the factor endowment theory is nothing more than a tautology since it describes the reality rather than explains it. Leamer's work, for example, offers a series of broad generalisations, some of which are so bland as to be obvious and others which are controversial, but are not substantiated. What would an empirical work prove if it confirmed that a capital-abundant country exported capital-intensive commodities and imported labour-intensive commodities? Would one expect, for example, a primarily agricultural (industrial) commodity producing country (assuming that agriculture (industry) is labour (capital) intensive) to export industrial (agricultural) commodities? To empirically test whether a capital 'scarce' country will export labour-abundant commodities is absurd. If a country produces capital (labour) intensive commodities it may naturally export capital (labour) intensive commodities and import labour (capital) intensive commodities.[30] The same is particularly true for natural resources (endowments) like minerals, oil, land, etc. Nobody disputes that if a country has large oil and other mineral reserves, it will export oil and minerals. Similarly, if it does not have much arable land it will not produce and export agricultural products, and if it is producing and exporting capital-intensive manufactures, machinery or chemicals it must also have capital and a highly skilled and educated labour force. This is neither something unexpected nor something peculiar to the Heckscher-Ohlin theory.

The heart of the matter is that the Heckscher-Ohlin theory offers nothing more than a series of broad generalisations. Such observations do not tell us why and how a country would benefit from specialisation in its endowments. Moreover, some of the

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[29] One should, however, recognise the practical difficulties and underlying theoretical problems of undertaking such an empirical work. See Hudson (1992, ch. 8) for a detailed analysis of Leontief's empirical work.

[30] Unless, of course, where a primarily capital-scarce country has large natural resource endowments (such as minerals) to export which require capital-intensive techniques to produce which is the case for many developing countries.

endowments are not endowments in a literal sense, since they can be produced. Capital can be created, labour can be trained and educated, etc.

The arguments put forward by the advocates of the factor endowment theory regarding the long-term development pattern and a gradual move from the production of labour-intensive commodities to capital-intensive commodities[31] (which is allegedly supported by the empirical evidence) as development takes place, is also a simple empiricism and a crude tautology. Johnson[32] (1968) argues that economic development is a process of investment in ever-increasing stocks of various forms of capital and the condition of being 'developed' consists of having accumulated capital and having established efficient social and economic mechanisms for maintaining and expanding increasing stocks of capital per person in various forms. The condition of being 'underdeveloped' is characterised, in contrast, by the possession of a relatively small stock of various kinds of capital.[33] Thus, it can be argued that it is the nature of development to move from labour-intensive production to capital-intensive production. In fact, a country cannot develop unless this transformation takes place. If development itself is identified by this structural transformation, identifying this process as evidence for the dynamic version of comparative advantage theory is nonsensical. Recommending at low-income countries specialise in labour-intensive commodities is another tautology since they can only produce labour-intensive commodities by definition.

As argued earlier, comparative advantage theory is not about an anticipation of the trade pattern but about promoting economic development through free trade and specialisation. Free trade, as an alternative development strategy against industrial policy and protectionism, suggests that by specialising in the production of a number of particular commodities, all countries that participate in trade will increase their welfare, particularly the low-income countries. As development requires a move from labour-intensive production to capital-intensive production, the success of the trade policy

[31] The logic of the theory suggests that an opposite process, a gradual move from the production of capital-intensive commodities to labour-intensive commodities, should occur in the developed countries. If development is associated with a move from the production of labour-intensive commodities to capital-intensive commodities (see the arguments below), 'de-development' should take place in the developed countries.

[32] Johnson is the founder of the dynamic comparative cost theory.

[33] Johnson (1968), cited in Gunasekera (1992: 46).

must be judged in terms of its contribution to the speed of this change and not with the stages of it. In view of this, recommending that African countries focus on the production of agricultural and primary commodities, for example, is absurd since they have always produced these commodities and followed their 'comparative advantage' without being able to transform their economies from labour-intensive to capital-intensive production. By advising low-income countries to focus on the production of labour-intensive commodities, comparative advantage theory hinders their development process. Using the East Asian newly industrialising economies as evidence of this theory[34] is also misleading since (as argued in chapter seven) they promoted industrialisation through industrial policies rather than relying on a 'natural' move from labour-intensive commodities to the capital-intensive commodities through liberal trade policies and comparative advantage. Moreover, there is no historical evidence to suggest that the industrial development process of Europe and North America can be explained by differences in resource endowment.

> Rather, it was probably a reflection of the extent to which some late industrialising countries were able to bridge an institutional hiatus with the lead industrial economies and begin a process of catching-up through high rates of investment, technological progress and rapid productivity growth. (Bairoch and Kozul-Wright, 1996: 15)

Given the tremendous theoretical weaknesses of the Heckscher-Ohlin theory (which will be discussed in the next section), it is even more paradoxical that so many writers still persistently try to solve Leontief paradox and try to find empirical evidence for the Heckscher-Ohlin theorem (or indeed against it) even after so many unsuccessful attempts. In our opinion, such empirical investigations are basically irrelevant and will not be investigated in more detail.

The discussion should not be on how to predict a country's export pattern but whether that pattern is the most beneficial for that country. The Heckscher-Ohlin model not only attempts to predict how countries would behave under free trade

[34] See Gunasekera (1992), World Bank (1993), and Song (1993).

conditions but it also offers a normative guide to 'how countries should behave'.[35] How countries would behave cannot provide us with a good guide for how countries should behave.

3.4. THEORETICAL CONSIDERATIONS

While the endless discussions and a vast number of empirical works are devoted to solving the mysteries of the 'Leontief Paradox', and as the Heckscher-Ohlin model has been 'developed' by modifying some assumptions, one may hopelessly try to find anyone who questions the overall theoretical validity of the Heckscher-Ohlin model. This remains so even after the damning critique of Steedman which undermines the basics of the theory. Advocates of the Heckscher-Ohlin model simply ignore such criticisms or prefer to assume them away rather than dealing with them. Consequently, the theoretical debate over trade policies has become like a dialogue of the deaf.

The failure of the empirical work has pushed the supporters of the theory to adjust some of the assumptions. Although the theory has become more complicated, it is by no means more sophisticated. Some argue that the 'theorem is valid only in the highly abstract environment of the two-factor, two-good, two-country model' and beyond this, when 'additional factors and countries are also added, it becomes difficult even to state the theorem, let alone to prove it.'[36]

A number of critiques stay within the limits of the Heckscher-Ohlin theory and reflect difficulties that the theory faces. For example, 'factor intensity reversal' refers to the situation in which a commodity is considered labour-intensive in a labour-abundant country and capital-intensive in a capital-abundant country. Factor intensity reversal may occur if differences in the elasticity of substitution of labour for capital in the production of two commodities are great. Or, if differences in initial factor endowments of two countries are very large relative to the variation of factor intensities among commodities, after specialisation the factor prices may not be equalised, even though they somehow converge.[37] However, the most important

[35] Hudson (1992: 210).
[36] Deardorff (1982: 683).
[37] See Edwards (1985: 31) for a comprehensive explanation of the FIR.

objection is not levelled against the technicalities and details of the Heckscher-Ohlin theory, but against its basic approach to the economy.

That is why dealing with exceptional cases or including more countries, more commodities and more factors of production or relaxing some of the assumptions, such as introducing different tastes, scale economies, imperfect competition, transport cost, government intervention, etc., does not necessarily make the theory more realistic since the basic tenets of the theory are erroneous. Thus, we will only deal with the most obvious problems of the theory and will not attempt to deal with more complex versions of the theory. Consequently, the next section will concentrate on the Heckscher-Ohlin model's treatment of capital and labour.

3.4.1. Capital as 'endowment'

It is acceptable for a theory to simplify the observed reality by assumptions in order to obtain meaningful results. However, firstly, these assumptions should simplify complex reality, but not distort it. Secondly, the different sets of assumptions should not contradict each other. As far as the assessment of any theory is concerned, it is only fair to question whether the theory observes these conditions. In view of this, when we look closely at the treatment of capital in the Heckscher-Ohlin theory we can see the shortcomings.

The treatment of capital in the Heckscher-Ohlin theory is simplistic. In the theory, capital is treated as a non-produced input and is externally given to the economy. Since it is not produced, it can be treated as an endowment just like land,[38] natural resources and population. As Steedman argues 'one should simply strike out the term 'capital' whenever it occurs and replace it by 'land.''[39] Thus the price of capital is often treated and referred to as rent and not as the rate of profit (interest).[40] It

[38] 'As Samualson cheerfully confesses, he had 'quietly replaced the venerable pair labour and capital by labour and land, hoping thereby to side-step some of the intricacies involved in any discussion of capital.'' Findlay (1995: 36)

[39] Steedman (1979a: 5). Some writers indeed treated capital like land and argued that replacing land by capital in the familiar 2x2 trade model leaves the four basic theorems unaffected. See Metcalfe and Steedman (1981) for an exposition and critique of such an approach.

[40] *Ibid.*

is obvious that this assumption is very strong and must be justified if it is to have any analytical validity.

Capital is also assumed to be internationally immobile so that capital movements would not eliminate capital 'scarcity'.[41] In its extreme form this assumption is unrealistic. Even though Heckscher assumes complete international immobility of capital, Ohlin deals with this assumption extensively and justifies it on the grounds that, first, 'less than perfect mobility' (which means that factor prices will not completely be equalised) allows room for trade based on factor endowments, and second, since capital mobility and trade both tend to equalise factor prices (thus they are assumed to be substitutes), mobility of goods (trade) may equalise factor prices before the mobility of capital. Thus, when mobility of factors of production is allowed, the importance of trade may be reduced but not eliminated.[42]

Before we come back to this issue and criticise the treatment of capital by the theory, a number of important anomalies strike us immediately. First, as the same technology is assumed to be available to all countries, the concept of development itself becomes obscure since we can only identify capital and labour-abundant countries. Because capital is treated as an endowment and the developed countries are assumed to be capital-abundant, development itself is reduced to this bizarre endowment. As countries do not have any control over their endowments, underdevelopment itself is seen as something externally given to the societies and can not be altered, except of course, by liberalising trade. The only option open to developing countries is to liberalise their international trade so that factor prices can gradually be relatively and absolutely equalised. Because developing countries are capital-scarce, the theory asserts, they should give up the idea of increasing their capital and stick with the only trade pattern available to them. 'In other words, acceptance, and adoption to, the existing differences between developed and underdeveloped capitalist regions is efficient from the point of view of the world-as-a-whole.'[43] The reason why only developed countries happen to be capital-abundant or why capital-abundant countries are developed remains unexplained. There is less

[41] Ironically, Ohlin criticised the classical theory as unrealistic since it also assumed international immobility of capital. (Flam and Falnders, 1991: 12)
[42] See Ohlin (1991: chapter seven).
[43] Shaikh (1979: 292).

capital in developing countries, because being less developed is identified as having less capital. The fact that there exists no 'labour-abundant' high-income country and no 'capital-abundant' low-income country proves the fact that the only way to develop is to increase capital 'endowment'.[44] History shows that nations are not endowed with capital either by physical nature or from without: they accumulate it by deliberate policies and institutions.[45] Nevertheless, the theory argues that, even though developed countries are capital-abundant (the reverse is also true: capital-abundant countries are developed), developing countries can develop without 'abandoning' capital. But if developing countries can develop without 'abandoning capital', there would be no correlation between 'capital-abundance' and development. We should see at least some labour-abundant developed countries.

Second, once capital is allowed to be produced, the concepts that the theory uses become tautological because one cannot talk about labour-scarcity (abundance) independently of capital-scarcity (abundance). What determines the scarcity (abundance) of labour is the availability of capital. Thus one can only talk about availability of capital but not labour since one also implies the other. Capital may be plentiful or not in a country, but there is no such thing as labour-scarcity (abundance). Labour-scarcity can only make sense with respect to land since its availability is determined by nature.

The theory also ignores the dynamic relationship between factor prices. It is assumed that high-income countries must be labour-scarce since wages are higher. According to the theory, what the investors do is to look at the relative prices of the factors of production, which are determined by their availability, and choose the right combination to maximise their profits. However, what determine the price of labour are the availability of capital itself and the factoral distribution of income. Real wages are higher in high-income countries not because labour is scarce but because the productivity of labour is high as a result of plentiful capital. As countries produce more

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[44] There is an interesting conceptual similarity between Heckscher-Ohlin theory and Emmanuel's "Unequal exchange" theory even though the conclusions they draw are different. Both theories assume that the technology is available to all countries, both theories are based on wage rate differences between developed countries and developing countries, both theories argue that wages are lower in developing countries because of excess labour supply, both theories explain development and underdevelopment with these wage rate differences.

[45] Hudson (1992: 29).

and more capital, they increase labour productivity and real wages. Thus, one cannot just look at the actual level of real wages to determine if labour is abundant or scarce. The true indicator, if labour supply is lagging behind labour demand, is the factoral distribution of income or the share of wages in total value-added (W/VA). In terms of the W/VA ratio there is not a significant difference between low- and high-income countries. Even though the W/VA ratio tends to be a little higher in the high-income countries, this tendency is not a rule and this could be explained by stronger labour movements in these countries.

Furthermore, when capital is allowed to be produced, any increase in capital production (capital becomes relatively abundant) also increases abundance of labour by, at least in the short-term, throwing them out of employment. In this sense as capital endowment increases, it also increases the labour endowment by increasing the availability of labour. It hardly makes sense to think of high-income countries as labour-abundant, when there is persistent long-term unemployment. In many cases, unemployment is much higher than in low-income countries. If anything, high-income countries should be considered as both capital and labour-abundant.

Third, as the Heckscher-Ohlin theory assumes that capital can neither be produced nor the return on capital be reinvested, the impact on the assumed factoral distribution of income on capital accumulation is completely ignored. If there was such a correlation between trade and factor shares in total production, capital accumulation would be higher in low-income countries before trade (which is self-contradictory since low-income countries are identified by lack of, or slower, capital accumulation) and it would fall after trade, hindering their development.[46]

Fourth, the factor-price equalisation and dynamic comparative cost theories imply that the case for trade will gradually disappear as a result of increased trade. This is because all countries will have similar factor prices and endowments and specialisation based on factor endowments will no longer be possible.

Given the obvious correlation between development and 'capital-abundance' (which the theory has yet to acknowledge), one would expect the theory to recognise

[46] Interestingly, when Heckscher analysed the possible income affects of protectionism (he was not primarily concerned with the income distribution implications of the theory), he argued that if protectionism benefits labour as opposed to capital, this would 'undoubtedly decrease average income

the importance of increasing capital 'endowment'. Instead, what the architects and the proponents of the theory do is either to completely ignore it or to avoid the problem by dismissing it without any justification. Going through the writings of Heckscher and Ohlin, and their subsequent followers, one would look in vain for any justification for such an assumption.[47] Heckscher recognises the problem but avoids it by saying that when 'there is a change in the supply of some, but not all, of the factors of production [...] it becomes a complicated problem.'[48] Similarly Leamer states,

> time is not an essential element in the static trade theorem, and the very difficult problems of defining and modelling capital in a dynamic world can therefore be avoided. Any study of dynamic changes would surely require a deeper treatment of capital than is evidenced by the traditional model that lists capital as an input along with other factors (Leamer, 1984: 44).

The only possible explanation for such an ungrounded assumption lies within the most important premises of neoclassical theory. The production of capital takes time and capital is only partially consumed in the production process.[49] This model assumes that what is true for a single firm is also true for the whole economy. Since in the short-term a firm can only increase its output by employing more workers, the same should also be true for the whole economy.

Neoclassical economics is based on static-efficiency, that is, removing resources from less efficient to more efficient uses. This argument is derived from opportunity cost. The opportunity cost of employing resources in less productive uses means a loss of production as they can be employed in more productive uses. This argument is based on another unrealistic assumption of full employment of resources since if resources are not fully employed, the opportunity cost argument fades away and the definitions of factor scarcity and abundance loose their meanings. If resources

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per person [since it would add] more to the population than the national income'. (Heckscher, 1991: 66)

[47] The best that some of the proponents can do is to argue that the theory still holds when 'the factors of production are no longer simply regarded as a vector of constants [and] allowed to vary endogenously'. (Findlay, 1995: 36)

[48] Heckscher (1991: 66).

[49] Leamer (1984: 42).

are not fully employed, factors are all abundant regardless of their prices and physical combination (capital-labour ratio) in the production process.

Capital as endowment (unproduced) is the core assumption of the theory. This assumption is necessary for the theory, because if capital is also a product of labour as well as final commodity, then, in fact, output is a function of labour and technology alone. Capital, however, cannot be considered as an endowment since it can be produced and controlled. As capital is a product of labour, like all other products, its value is determined by the necessary labour time required to produce it, not by its scarcity. In this case, the capital-labour ratio becomes simply the ratio of two groups of labour, which are employed in different sections of the economy. If capital is produced, assuming all countries have the same technology, there is no reason why one country should have (be endowed with) more capital than another and consequently no case for trade based on capital endowment. This is so, because if capital is produced (given the assumptions and the logic of the theory), there is no such thing as capital-scarcity or abundance, at least not in the long-run. If there is capital-scarcity, the price of capital will temporarily rise until more capital can be produced. The same is also true for labour. The value of labour is not determined by its scarcity but, like any other commodity, by necessary labour time to reproduce it.[50] This, in turn, is determined socially, in the production process by the relative power of the workers and the bourgeoisie.

Within the short-term assumptions of the model we are not allowed to ask why some countries have more capital (endowed with capital) than others,[51] as this would be as silly as asking why some countries can produce more oil than others. But we are allowed to ask why some countries use more capital-intensive techniques than others. The answer is that capital must be cheaper in those countries that employ more capital.

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[50] See Marx (1990, vol 1).

[51] 'When economic jargon refers to countries having certain endowments of capital, labour, land and minerals, it abstracts the existing division of world labour from this historical context by brushing aside how today's industrial nations originally came to acquire their own capital 'endowments' and productive powers. One looks in vain for recognition of the role played by social, political and economic institutions in transforming comparative costs and resource development. Whatever cost structures exist at a given moment in time are viewed as being inherently natural. This attitude was provided a century ago by Marx when he asked rhetorically whether 'You believe perhaps, gentlemen, that the production of coffee and sugar is the natural destiny of the West Indies? Two centuries ago, Nature, which does not trouble herself about commerce, had planted neither sugar-cane nor coffee trees there.'' (Hudson, 1992: 30)

But why is capital relatively cheap in those nations? Because they are capital-abundant and labour-scarce.

When it is accepted that capital can be produced, then, there is no reason why capital-scarce countries should not increase their capital production. Since the price of capital is high, producing capital would be more profitable. If capital is produced, the relative price of capital will fall (it is no longer scarce) and trade based on relative factor prices will become irrelevant. In the absence of capital movements, there is no reason whatsoever, to assume why free trade should equalise the factor prices.

The 'short-run' assumption has some interesting features. It contradicts the mechanism of the model. In neoclassical theory, time is a very curious thing.[52] The model is basically timeless but when it refers to the short-run, it is defined as not having enough time to produce more capital. So, in the short-run, the amount of capital is fixed and externally given to the economy. But what causes suspicion is that, in the theory apart from capital there seems to be enough time for everything else to adjust, and in fact it all adjusts simultaneously. The only thing that can not adjust is capital. The theory is based on two clear exaggerations: first, capital does not adjust, not even in the long-run; second, everything else adjusts simultaneously. For example, when free trade is allowed, countries have enough time to move resources from production of one commodity to another to specialize in commodities according to their endowments, but they do not have enough time to produce more capital. This is bizarre indeed, particularly considering the neoclassical insistence on the flexibility of markets and their criticism of structuralism. This arbitrariness of the concept of time gives the theory's ideological mission away. Nevertheless, 'short-run' is a mental construction to get desirable outcomes. This theoretical construction serves well the neoclassical approach of analysing a pure exchange economy and the static-efficiency arguments.[53]

A number of other critiques can be directed to the theory. First, even though Ohlin's argument on international capital mobility in terms of foreign direct

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[52] See Weeks (1989: 38) for an interesting exposition of the time concept in neoclassical economics.

[53] The greatest contribution of the neoclassical economics was to provide a way to justify profits. It has always been a moral dilemma how and why capitalists deserve profits if all value is created by labour as classical economists argued. The contribution of capital could not have been proven unless a mental construction, short-run-fixed capital, was invented.

investment[54] has some value, there is no reason why capital cannot be traded. It is not reasonable to argue that consumption goods can be traded but not capital goods. Thus, capital-scarcity has no real meaning.[55] Second, the assumption that the factors of production can be moved from the production of one commodity and be employed in the production of another without any cost is clearly unrealistic. Third, the discussions based on the capital-labour ratio are increasingly irrelevant since many modern industrial sectors and services are increasingly labour-intensive. The right word perhaps is technology intensive rather than capital-intensive. As the share of services in developed countries' economies increases and as services become more and more an item for export, developed countries tend to become less capital-intensive.

3.4.2. The capital controversy

The Capital Controversy arises because capital is not homogeneous and cannot be aggregated. The Heckscher-Ohlin theory argues that if capital is abundant it will be cheap. But how do we know if capital is abundant or not? One way to determine this is to look at the capital-labour ratio. If capital were homogeneous (same machinery, for example), we could simply count and divide by labour. But capital not only consists of machinery, but also includes other commodities, buildings, etc. Furthermore, the machinery that is used in the production process itself is not homogenous. This leaves us with only one option: to aggregate capital in terms of money. This solves one problem but creates some others. First, the international comparison of capital-labour ratio might be distorted because the value of domestic capital in local currency converted into dollars at nominal market exchange rates might understate the true amount of available capital, since it does not take into account the international differences in prices.[56] Second, the market value of capital cannot be calculated

[54] In his writings, it is not clear what he means by international mobility of capital. The way he argues suggests that he is referring to FDI rather than the trade of capital goods.
[55] Of course, not all capital, particularly infrastructure, can be traded internationally. However, first, they can still be produced, and second, their production should be higher in labour-abundant countries, according to the logic of the theory, since infrastructure is usually labour-intensive.
[56] This is now a very well-known fact and per capita GNP comparisons are done by using PPP rather than the nominal exchange rate. See Kravis (1986), Economist (1993).

independently of the rate of interest (factor price ratio or distribution). If the interest rate increases, the cost of borrowing and the cost of capital also increase.

> Thus the Heckscher-Ohlin theory is now faced with a logical problem. It wants to say that if capital is abundant, it will be cheap, that is the rate of interest (or profit) will be low. And yet it seems that we cannot define whether capital is abundant by first specifying the rate of interest. We are in a nasty vicious circle! (Edwards, 1985:33)

The whole theory reveals a chicken and egg dilemma. Of course, one could approach the problem from other way around by comparing factor prices. If the interest rate is low compared to the wage rate, capital must be abundant in that country. If capital (labour) is abundant, the capital-labour ratio must be high (low). This argument is based on the marginal productivity theory of income distribution. If the interest rate is low (high), the marginal contribution of capital must be low (high), since all the factors of production receive the value of their contribution. If that is the case, capital (labour) must be relatively abundant.

This argument is again based on the 'short-term' (capital fixed and not produced) approach. If capital is fixed and production is increased by employing more labour (when labour is increased, a new, labour-intensive technique is chosen), the marginal contribution of labour will diminish as the number of workers increases. The capitalists will employ more labour-intensive techniques only if the workers accept a lower wage rate which corresponds to their lower marginal productivity. So if all factors of production are fully employed, the relative prices of the factors of production must reflect their marginal contribution and their relative abundance.

> The argument seems to be deceptively simple. It is, but it is also simply deceptive. It suffers from misplaced aggregation. For although the individual entrepreneur faces given factor prices, the economy as a whole does not. (Edwards, 1985: 35)

In a two-factor and two-good model,[57] it can be shown that, even if all other assumptions of the marginal productivity (and Heckscher-Ohlin) theory are accepted, the neoclassical relationships between employment and the prices of the factors of production break down. In the following model,[58] there are two goods (cloth and wheat) and there are two factors of production (labour and capital). If we assume that each of the commodities is used in the production of both commodities, the production equations can be specified as:

1. $(P_C \cdot Q_{CC} + P_W \cdot Q_{CW}) \cdot (1+r) + W.L_C = P_C$ (cloth)
2. $(P_C \cdot Q_{WC} + P_W \cdot Q_{WW}) \cdot (1+r) + W.L_W = P_W$ (wheat)

where:

$P_{C,W}$: prices of cloth and wine.
$L_{C,W}$: labour input required to produce one unit of each commodity.
Q_{CC} : The quantity of cloth used in the production of one unit of cloth.
Q_{CW} : The quantity of wheat used in the production of one unit of cloth.
Q_{WC} : The quantity of cloth used in the production of one unit of wheat.
Q_{WW} : The quantity of wheat used in the production of one unit of wheat.
W : wage measured in units of the output and paid at the end of production period.
r : rate of return (interest rate)

From the above equations, we see that even when the physical coefficients of the inputs are assumed to be constant, there are four variables (prices of the commodities, wages and rate of return) which cannot be solved by two equations.[59] The relative prices of the commodities cannot be determined unless the distribution of the net output (value-added) between capital and labour is determined. The relative prices of the commodities will vary according to the factoral distribution of income. As a consequence, the Heckscher-Ohlin model is 'shown to be logically flawed and unable

[57] Sraffa (1963).
[58] Adopted from Edwards (1985: 36).

to deal with the production of commodities by means of commodities.'[60] It is not true to argue that the prices of the factors of production are determined by their marginal productivity.

Moreover, the extension of the theory proves that, when commodities are produced by means of commodities, the factor prices do not necessarily reflect their marginal productivities and the proposed correlation between wage rate and unemployment disappears. Therefore, it is not necessarily true that more workers will be employed when wages fall and the wage rate will not reflect labour 'endowment'. By looking at factor prices (wage and interest rate) factor endowment cannot be determined.[61]

To sum up, the arguments put forward prove that there is no unambiguous way to know if a country is labour or capital-abundant since the value of capital cannot be determined independent of factor prices (interest and wage rates) and since factor prices do not reflect their marginal productivities.

Furthermore, once it is understood that factor and commodity prices are not independent from each other, the factor-price equalisation theory also fails. It is no longer acceptable that by specialising in labour-intensive commodities developing countries will increase their employment. Even if they do, the wage rate will not necessarily rise. From this perspective, the Leontief Paradox is not a 'paradox' any more. Once the capital aggregation problem is recognised, there is no longer a paradox to be explained.[62]

3.4.3. A comparison of the Heckscher-Ohlin and Ricardian models

The Heckscher-Ohlin model is seen as an advancement over the Ricardian model for its predictions on the patterns of trade between low- and high-income countries. Since low-income countries are capital-scarce, with free trade, they find it more profitable to export labour-intensive commodities and import capital-intensive commodities. The expectations of the Ricardian model are the same. Even though the reasoning is

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[59] Even if the price of one commodity is normalised, there will be three variables with two equations.
[60] Edwards (1985: 36).
[61] See Weeks (1989), chapter ten.
[62] Edwards (1985).

different, the Ricardian model also predicts that the low-income countries should export labour-intensive commodities. There is no doubt that the *relative* prices of the labour-intensive commodities are lower in the low-income countries and this, in turn, means they have comparative advantage in labour-intensive commodities. This, however, is not as a result of the relative prices (or scarcities) of the factors of production but as a result of low average productivity in developing countries.

It was already argued that the relative prices of commodities (and the price of capital goods) are determined by their labour content and their capital input requirements, not by their scarcities. The higher real wages in the developed countries only indicate higher labour productivity in those countries. It is true that labour-intensive commodities are *relatively* more expensive in developed countries than developing countries. One of the striking examples of this is second-hand commodities, particularly cars. Second-hand cars in developed countries are *relatively* much cheaper compared to developing countries because their repair cost is higher in developed countries, and repair cost is higher in developed countries as car repair is labour-intensive and labour is 'expensive'. How can this be explained?

Suppose there are two countries (England and Portugal) and two consumption goods (C_K: capital-intensive consumption good and C_L: labour-intensive consumption good). In order to simplify, both consumption goods are assumed to be produced by the same capital good (K_K) in both countries and productivity, thus price (P_K), in both countries is the same.[63]

Using equations 1 and 2:

In England and Portugal:

$$P_K \cdot K_K + W \cdot L_K + r(P_K \cdot K_K) = P_K \quad \text{(Capital good)}$$
$$P_K \cdot K_{CK} + W \cdot L_{CK} + r(P_K \cdot K_{CK}) = P_{CK} \quad \text{(Capital-intensive consumption good)}$$
$$P_K \cdot K_{CL} + W \cdot L_{CL} + r(P_K \cdot K_{CL}) = P_{CL} \quad \text{(Labour-intensive consumption good)}$$

[63] In reality one would expect developed countries to be more productive in producing capital goods, but this would not change the results of our arguments.

where:

P_{CK}: Price of the capital-intensive consumption good.

P_{CL}: Price of the labour-intensive consumption good.

L_{CK}: Labour input required to produce one unit of capital-intensive consumption good.

L_{CL}: Labour input required to produce one unit of labour-intensive consumption good.

K_{CK}: Capital input required to produce one unit of capital-intensive consumption good.

K_{CL}: Capital input required to produce one unit of labour-intensive consumption good.

As already mentioned, the relative prices of the commodities are determined by their labour content and capital input requirements. Just for simplicity if we assume that the capital input requirement is the same for all commodities ($K_K = K_{CK} = K_{CL}$), their prices will only be determined by their labour content. Therefore, the higher the labour content is the higher the relative prices are.

$$[P_{CK} / P_{CL}] = [L_{CK} / L_{CL}]$$

since

$K_{CK} / L_{CK} > K_{CL} / L_{CL}$ by definition, and $K_{CK} = K_{CL}$ by assumption

then

$L_{CK} < L_{CL}$ and $P_{CK} < P_{CL}$

By definition, the capital-intensive (high capital-labour ratio) commodity is the high productivity commodity and labour-intensive (low capital-labour ratio) commodity is the low-productivity commodity. If England and Portugal have the same productivity levels in terms of C_L but England is more productive in terms of C_K, then:

P_{CL} in England = P_{CL} in Portugal (since L_{CL} in England = L_{CL} in Portugal)

P_{CK} in England < P_{CK} in Portugal (since L_{CL} in England < L_{CL} in Portugal)

Total prices ($P_{CL} + P_{CK}$) and relative price of capital-intensive commodity (P_{CK} / P_{CL}) in England will be lower than Portugal.

P_{CK} / P_{CL} in England < P_{CK} / P_{CL} in Portugal.

Thus, labour-intensive commodities in high-income countries are relatively more expensive, not because they are labour-scarce but because of high average productivity. Labour-intensive commodities are labour-intensive because of low-productivity. Even if England is more productive in both commodities, as long as the productivity gap between the low-productivity commodity (low capital-labour ratio) and the high-productivity commodity (high capital-labour ratio) increases, labour-intensive commodities and thus labour will be *relatively* more 'expensive' in England. Thus, as productivity increases in developed countries faster than developing countries, so does the gap between a low-productivity commodity and a high-productivity commodity. That is why, in developed countries, labour-intensive commodities and labour seem to be more expensive. But this 'expensiveness' is relative, not absolute. As a result, the Ricardian comparative advantage theory also predicts specialisation in labour-intensive commodities for developing countries and in capital-intensive commodities for developed countries. Thus, one can conclude that the assumed theoretical advance of the Heckscher-Ohlin model over the Ricardian model is false.

3.5. CONCLUSION

The Heckscher-Ohlin model was produced as an alternative to the Ricardian model. It had an ideological mission: elimination of the labour value theory and incorporation of the neoclassical price mechanism (where the prices of factors of production are determined in a general equilibrium system) into international trade theory. Ohlin directly attacked the basic tenets of Ricardian labour value theory and argued that it breaks down once 'labour and capital are used in different proportions' in the production of all goods, since 'if the proportions are not the same, then comparing

quantities of labour gives inaccurate results, since those commodities using much capital will have higher costs of production'[64]. This critique of labour value theory is based on a misunderstanding or misrepresentation of the theory. In the Ricardian model, capital is also a product of labour and when the quantities of labour are compared for different products, the quantity of labour that is used to produce capital is also taken into account.

The Ricardian theory was also blamed for assuming rather than explaining the reasons for comparative advantage. This, however, is an exaggeration. Ricardo's model was based on the different productivity levels, which in turn required an understanding of how these different productivity levels were historically created. Underdevelopment is associated with lower productivity and an explanation of this is controversial. Ricardo was not prepared to explain these productivity differences between countries, but at least he was aware of them. The Heckscher-Ohlin theory, however, offered an ideological opportunity to avoid such basic questions and disguised fundamental differences in productivity levels by focusing on factor endowments. The Heckscher-Ohlin theory not only succeeded in justifying free trade, but also avoiding serious development issues by excluding them from discussion.

Once the invalid assumptions of the theory are identified, and once the unreasonable silence of the advocates of the theory on these assumptions is understood, the ideological mission of the theory becomes clearer. The heavy theorisation and mathematicisation of the theory by its advocates cannot save it. The basic tenets of the theory are unrecoverably flawed. As Steedman argues, it is not that 'more work needs to be done on further refining an already elaborate theoretical structure; it is that the basic vision and presuppositions of the theory render it incapable of dealing with important facts about production, trade and growth.'[65]

Almost twenty years ago the most prominent critique of the theory predicted that '[i]t is inevitable that, over the next few decades, some writers will continue to make more and more 'internal' modifications to Heckscher-Ohlin theory, in the attempt to make it relevant to real world growth and trade. [However] the basic vision and emphasis of Heckscher-Ohlin theory are such that that attempt, while welcome,

[64] Ohlin (1991: 200-201).
[65] Steedman (1979a: 6).

will have somewhat limited success until the 'modifications' result in the effective abandonment of the basic framework.'[66] Twenty years after, the advocates do not seem to have given up and they are not likely to give up until they find another general equilibrium model that performs better. The ideological convenience of the theory is so great that unless the dominant ideological paradigm in the international political economy changes, the neoliberals are unlikely to abandon the theory regardless of its lack of theoretical and empirical validity.

[66] *Ibid.*

APPENDIX

Table A3.1. Countries used in table 3.1 and in the regression

Algeria, Argentina, Australia, Austria, Bangladesh, Barbados, Belgium, Bolivia, Brazil, Burkina Faso, Burundi, Cameroon, Canada, Central African Republic, Chile, China, Colombia, Congo, Costa Rica, Cote d'Ivoire, Cyprus, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Fiji, Finland, Ghana, Greece, Guatemala, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iran, Iraq, Ireland, Israel, Italy, Jamaica, Japan, Kenya, Republic of Korea, Kuwait, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritius, Morocco, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Pakistan, Panama, Papua New Guinea, Philippines, Poland, Portugal, Singapore, South Africa, Spain, Sri Lanka, Swaziland, Sweden, Syrian Arab Republic, Tanzania, Tunisia, Turkey, United Kingdom, United States, Uruguay, Venezuela, Zambia, Zimbabwe

CHAPTER FOUR

DYNAMIC COMPARATIVE ADVANTAGE, TRADE POLICY AND EXPORT PESSIMISM

4.1. INTRODUCTION

The first two chapters criticised the shortcomings of two versions of the theory of comparative advantage. It was argued that Ricardian comparative advantage theory is static and based on a simplistic interpretation of labour value theory. The Heckscher-Ohlin-Samuelson model, that claims to improve the Ricardian model, in fact has even more serious theoretical problems. In particular, the treatment of capital in the model was criticised.

Currently, even the most prominent proponents of comparative advantage accept that, in its static form, the theory is inaccurate. They argue, however, that dynamic versions of the comparative advantage overcome the shortcomings of the static version. They argue that as a result of scale economies, the long-run cost structure might be different from the short-run. Thus, sectors that have short-run comparative advantage may not possess a long-run advantage. This means that specialisation based on current cost structures may not always be beneficial in the long-run. In this view, short-term interventionist policies which aim at changing the cost structure are justified. Nevertheless, trade and specialisation based on comparative advantage are still seen as the best option for developing countries. The aim of the first section of this chapter is to expose and criticise the different versions of dynamic comparative advantage theory. It will be argued that the theory of comparative advantage is static by nature and cannot be made dynamic. Dynamic comparative advantage is a contradiction. Therefore, the whole concept of comparative advantage is fundamentally misleading and should be abandoned.

The second section of this chapter will briefly evaluate the theoretical arguments regarding trade policies, namely the debate over import-substitution and export-promotion policies. The theoretical confusion surrounding the definitions of

import-substitution and export-promotion will be clarified. In the literature, import-substitution and export-promotion policies are mistakenly considered as mutually exclusive and alternative trade policies. Moreover, export-promotion policies are associated with trade liberalisation. This chapter will argue that the 'import-substitution – export-promotion' dichotomy results from the static neoclassical model where there are two sectors and all factors of production are fully employed. In a dynamic world where the static parameters of the neoclassical model are allowed to change and where there is unemployment, however, import-substitution and export-promotion policies can be seen as complements rather than substitutes. Import-substitution policies can be seen as a precondition for export-promotion policies, and both policies can be implemented simultaneously.

Finally, this chapter will briefly summarise and evaluate the arguments related to so-called export pessimism. Particularly after World War II, a number of economists expressed their pessimism about the export performances of developing countries and the possibility of development based on exports. These ideas were expressed in a number of different ways. Pessimism about the terms of trade, protectionism of developed countries, and the fallacies of composition were offered as arguments against relying excessively on exports. These arguments were used in many developing countries as justification for import-substitution and protectionist policies. Even though these ideas were discredited theoretically and empirically, particularly during the 1980s, the debate continues. In this chapter, it will be argued that, the 'export pessimists' made undeniable contributions to our understanding of the problems of developing countries and even though not all of their arguments are accurate, they provide a substantial critique of the current dominant neoclassical paradigm.

4.2. DYNAMIC COMPARATIVE ADVANTAGE

Recognising the limits of static comparative advantage theory has led to a wide range of studies attempting to develop a dynamic version of the theory. These new ideas are based on the possibility of structural changes in the long-run as a result of scale economies. There are a number of diverse arguments that can be grouped under the

heading of dynamic comparative advantage theories. These theories seek to remove the static nature of typical comparative advantage theory by focusing on the future rather than the current comparative cost structure.

Static comparative advantage theory is based on the assumption of constant (or diminishing) returns to scale. This assumption implies the existence of perfectly competitive markets and avoids the complications arising out of uncompetitive markets as a result of economies of scale. Static comparative advantage theory is unsustainable unless perfect competition is assumed. Endorsing the importance of scale economies, the so-called 'new growth theories', however, argue for the possibility and possible benefits of trade. The new growth theories assert that domestic markets in many instances are too small to exploit scale economies.[1] They perceive the limitations of traditional comparative advantage theory (classical and neoclassical versions) of trade and bring forward a more realistic case for international trade. Focusing on the endogeneity of technological change (a traditionally exogenous variable in neoclassical growth models) and increasing returns to scale,[2] they argue that an open economy can

> raise growth, first, by increasing access to embodied technology at world prices, and therefore by boosting the rate of technical progress; second, by raising productivity in sectors subjected to increasing returns due to the integration to the world market; and finally by optimising allocation and therefore freeing resources to be allocated in research and development. (Moreira, 1995: 8)[3]

The new growth theories propose a link between openness and the long-run growth rate of output rather than a rise in the level of output.[4] This can arise through the favourable impact of openness on technological change. Openness increases the growth rate by allowing countries to earn foreign exchange which can be used to import those necessary inputs and new technologies that cannot easily be produced by

[1] See Pio (1994).
[2] 'There are now models which endogenise technical progress, fertility choices, human capital formation, even policy decisions resulting from political processes' (Pio, 1994: 277).
[3] See also Pio (1994: 281, 289).

developing countries. With openness, it is possible to use external capital for development without causing serious debt problems.[5]

These arguments produce a powerful incentive for trade but create more problems for free trade. For example, increasing returns to scale and the recognition of imperfect competition are the primary arguments for the protection of 'infant industries'.[6] Moreover, recognition of endogeneity of technological change is also an indirect recognition of uneven development. The proponents of the theory argue that 'endogenous growth theory predicts that increased openness will result in dynamic advantages which can positively affect the growth rate.'[7] But they also recognise that

> the gains will be considerable if (a) there is in fact a different stock of knowledge in the countries which reach closer integration, or if information flows improve as a result of integration, and (b) if integration leads to economies of scale. If on the contrary, a country cannot compete in terms of quality or marketing capacity, it risks seeing its market shrink and diseconomies of small scale set in. (Pio, 1994: 290)

Furthermore,

> in order to reap the maximum benefits from increased openness, developing countries need to obtain access to markets which will allow them to achieve economies of scale, and need to be able to expand their production also in some sectors which are both R&D and human capital intensive. This last objective seems particularly difficult to achieve, given their competitive disadvantage in high technology industries on the international stage. (Pio, 1994: 291)

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[4] Matin (1992: 6).
[5] Dollar (1991: 523).
[6] 'Krugman (1986) emphasises that the 'perfect competition' assumption underlying the comparative advantage theory is clearly unworkable in today's world and that the magnitude and nature of externalities and dynamic economies are far more significant than is recognised. In the presence of oligopoly and scale economies, import protection is not only compatible with, but may even be instrumental to export-promotion (Krugman, 1984).' (Liang, 1992: 449)
[7] Pio (1994: 290).

Separating free trade policy from comparative advantage theory, Schydlowsky (1984) argues that there is no real contradiction between structuralism and comparative advantage theory. He states that '[c]omparative advantage theory is well-known in Latin America, but not by that name. Rather it is called industrialisation policy, associated with structuralism, ECLA and Prebish.'[8]

Another important concept developed by the dynamic comparative advantage theorists is 'learning-by-doing'. Learning-by-doing is also related to market size but differs from economies of scale. The notion of scale economies 'involves moving down a long-run average cost curve as the size of the market grows. Learning-by-doing [on the other hand] involves shifting the long-run average cost curve downward through time.'[9]

Grabowski (1994a) argues that both learning-by-doing and scale economies depend on the size of the market and both import-substitution and export-promotion policies guarantee the size of the market in turn. Initially, import-substitution policies, by protecting the domestic market, allow demand for selected industries to grow faster than domestic consumption, 'owing to the fact that imports of the particular product are being replaced with domestic production.'[10] When the limits of the domestic market are reached, however, export-promotion policies allow demand to grow faster than domestic consumption. 'Both of these mechanisms allow for more rapid productivity growth through greater investment (embodying new technology), increasing returns to scale and learning through experience.'[11] This is a dynamic structuralist approach to trade theory and implies that openness in terms of trade ratio (the share of exports and imports in total GDP) is a function of economic development. Countries trade more as development takes place but not vice versa. In other words, they do not necessarily develop if they trade more.

A similar version of dynamic comparative advantage theory, put forward by Dodaro (1991 and 1993) and Yaghmaian (1994), is the 'stage of development' comparative advantage theory. They argue that during the earlier stages of development, economic growth promotes export growth since a country's ability to

[8] Schydlowsky (1984: 447).
[9] Grabowski (1994a: 542).
[10] *Ibid.*
[11] *Ibid.*

export depends, essentially, on its ability to produce products which are competitive in world markets. In later stages of development, however, export growth is more likely to promote overall economic growth. Dodaro (1991) has argued that the export sector may not play as important a role in development as is generally believed – at least not directly and not until some degree of development and domestic productive efficiency has been achieved. Yaghmaian (1994) argues that both exports and economic growth are caused by the process of development and structural change. Exports and economic growth are both the results of the same forces. Thus, while the correlation between the two may be quite strong, no causal relationship may exist between them.

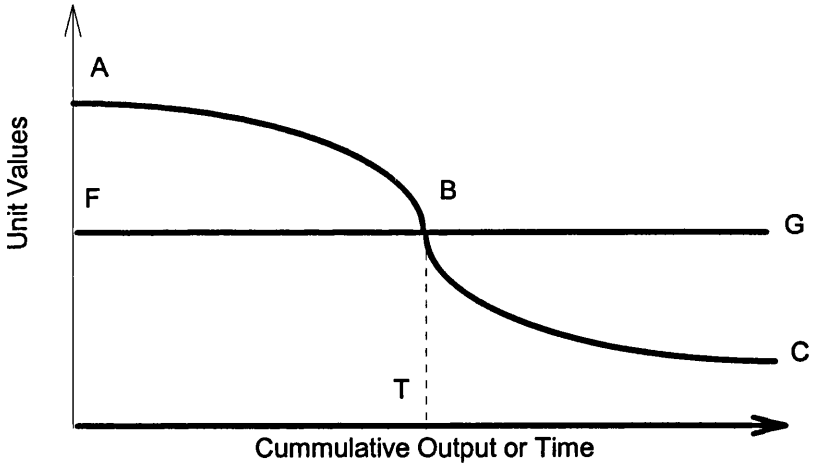
Assuming that developing countries are usually demand constrained, this argument suggests that the greater a nation's per capita income, the greater is its ability and propensity to competitively produce a more varied menu of manufactured goods for which demand exists in the international market. Thus, *ceteris paribus*, the greater the level of development, the greater is the proportion of manufactures in total merchandise exports. Put another way, the greater the level of development, the greater is the level of processing a country's export basket. Following the basic tenets of international trade and comparative advantage theory, a reversed causal sequence can also be envisaged, that is, economic growth leads to export growth, particularly for those countries still at the early stages of the economic development process.

The infant industry argument, perhaps, is the most well-known form of dynamic comparative advantage theory and provides the strongest rationale for short-term protectionism. Based on the assumption of increasing returns to scale and learning-by-doing, it is argued that developing countries should protect their industries from foreign competition and allow them to exploit scale economies until they become strong enough to compete in international markets. This diversion from static comparative advantage theory is very important. The theory argues that, as a result of the existence of scale economies and learning-by-doing, an infant industry may reduce its average cost low enough to become competitive in international markets if it is given the opportunity and if it is protected against free market competition for a period of time. Because the 'start-up costs for plants in a less developed country's infant industries are thought to exceed those for identical plants

in economies where these industries are well established,'[12] there is an initial cost that a country must bear since importation of that commodity would cost less to the customers. If, however, average cost eventually falls lower than average international cost, the country will benefit in the long-run.

Before deciding whether an infant industry should be protected or not, a number of important questions must be answered: 'Are the start-up cost higher [than the competitors]? How much higher? [Will] production costs eventually fall to levels below those in well established industries? After how long?'[13] Will the performance of the infant industry match the expectations? The following figure will help to clarify the reason for these questions.[14]

Figure 4.1: Cost structure of infant industries



In the figure, FBG represents unit international cost and ABC is the unit cost of the protected infant industry. Initially the infant produces at a higher cost but gradually it matures (at T) and becomes internationally competitive. The area FAB illustrates the social cost that has to be paid before maturation and BGC represents the benefits after maturation.

It is important to know how long it will take for an infant industry to mature so that these two areas can be compared for each industry and those that maximise total benefit can be promoted. If it takes too long for the infant industry to mature the social

[12] Bell *et al.* (1984: 101).
[13] *Ibid.*
[14] Taken from Bell *et al.* (1984: 104).

cost might be higher than the discounted future benefits, or alternatively the infant industry may not mature at all. There are three reasons why an infant industry may fail to mature. First, it may fail to increase productivity. Second, even when the industry is experiencing high productivity growth, international competitors may increase their productivity faster. Third, the infant industry may be growing faster but the initial cost might be so substantial that it might have difficulties in achieving international competitiveness.[15] Thus, according to the logic of this argument, an infant industry should only be protected if there is scope for positive net benefits.

The infant industry argument has been widely criticised because of these required conditions. Many have argued that infant industries have a tendency never to grow up even though society pays the cost of protection, the assumed benefits may never materialise. There is a growing empirical literature which shows that in many countries protected infant industries have failed to mature.[16]

Finally, by pointing out the interaction between present and future production decisions, Schydlowsky focuses on the dynamic nature of comparative advantage. He argues that

> [s]ince most production decisions commit a country for more than a single period, the future is relevant to present comparative advantage. However, the future is shaped in part by the actions of the present rather than being entirely exogenous. The past also affects present comparative advantage through the legacy of installed productive capacity. (Schydlowsky, 1984: 439)

He points out that unless one postulates a static, unchanging world, 'production decisions which commit the country for more than a short period of time need to take

[15] For details see Alavi (1996: 108) and Bell, *et al.* (1984: 115).

[16] Bell (1984: 111), however, argues that the majority of the empirical works have serious deficiencies and 'throw little light on the issue'. See Bell, *et al.* (1984) for a brief exposition and evaluation of the literature. Even though some of the arguments about the failures of infant industry theory are valid, they do not necessarily invalidate the theory. The aim of this section is not to defend the theory against the critiques, or to do an extensive literature survey on the debate about whether infant industry theory is a good justification for protectionism. A good exposition and evaluation of the arguments in defence of the theory can be found in a number of excellent articles published by Bell, *et al.* (1984), Jacobsson (1993) and Grabowski (1994a and 1994b). In fact, the aim of this section is to criticise infant industry theory and all the other dynamic versions of comparative advantage theory from another angle. It will be argued that comparative advantage theory is a static theory and cannot be made dynamic.

into account future comparative advantage as well as present comparative advantage.'[17] The same point was made by Findlay (1987) who argued that static comparative advantage theory does not take 'momentary' and 'long-run' comparative advantage into account.[18] Momentary comparative advantage is based on factor endowment at a given instant. In the long-run, however, endowments are not fixed.

> The sector that has a momentary comparative advantage may or may not have long-run comparative advantage. [...] An export-promotion strategy that focuses exclusively on the expansion of the traditional export sector with momentary comparative advantage may not always be the best choice. (Liang, 1992: 456)

A critique of dynamic comparative advantage theories

Surely, dynamic versions of comparative advantage theory are an advancement over static versions, since they recognise the possible changes in long-run comparative cost. In this section, however, it will be argued that dynamic comparative advantage theory is an extension of the static theory and even though it strives to eliminate the shortcomings of the static version, it cannot escape from its overall deficiencies. Comparative advantage theory is a static theory by its nature, and cannot be made dynamic. Thus, dynamic comparative advantage theory is a contradiction.

First, the meaning of comparative advantage needs to be clarified. For Schydlowsky, comparative advantage is no more than that a country chooses to produce which it can produce best. In this sense, it implies neither free trade nor protection.[19] However in the literature this is not how comparative advantage is generally understood. Since the concept was first introduced by Ricardo, it has almost always been associated with free markets and laissez-faire. This is quite reasonable given the assumptions of the theory. In a world where there are only exportables and importables, and where there is full employment of all resources, production of

[17] Schydlowsky (1984: 440).
[18] Findlay (1987: 97) cited in Liang (1992: 456).

exportables requires importation of importables and this necessarily brings about import liberalisation. When we drop these assumptions, however, the case for comparative advantage as well as free trade falls. Saying that 'a country chooses to produce those things which it can produce best' is no more than a tautology. It is obviously so and no one disputes it. The theory, however, tells us something more. It tells us that a country will benefit from specialisation according to its comparative advantage whatever the commodity is – be it a primary or a high-tech commodity.

Schydlowsky recognises that, in the real world, things are not so simple as the theory suggests. He states that

> the equivalence between a free trade policy and a comparative advantage policy only holds under very restrictive and idealised conditions. In most real world situations, market prices do not fully reflect social scarcities, countries can affect some prices to some extent, externalities and learning-by-doing exist, and markets are not fully competitive. Evidently, under such real world conditions a free trade policy is no longer equivalent to a policy of production according to comparative advantage. (Schydlowsky, 1984: 439)

However, the free market as described in neoclassical theory is not so much a special case, but it simply does not and cannot exist.

Second, even though dynamic comparative advantage theory attempts to eliminate the static nature of static comparative advantage by introducing 'relative future cost' into the analysis, it nevertheless remains a static concept as it relies on static parameters like the production function and factor endowments.[20] The infant industry argument, for example, is a 'dynamic' version of comparative advantage because specialisation is based not on current but on future comparative cost. The argument is that today's comparative advantage (comparative cost) may not reflect real (future) comparative advantage. In the figure above, the falling cost of the product

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[19] Lal and Rajapatirana (1987: 189) make the same point. They argue that static comparative advantage does not involve any commitment to laissez-faire. The 'law' of comparative advantage applies to both socialist and capitalist economies.

[20] See Bell *et al.* (1984: 124). All dynamic versions of neoclassical models are in fact static in nature. Introducing a time factor into a model (i.e. calculating the present discounted value of investment) does not necessarily make the model dynamic.

below the international cost is anticipated. The long-run production function tells us that the sector will have a comparative advantage in the future. In the infant industry argument, protection is justified only temporarily and only if an industry has potential competitiveness in the future. Otherwise the market should be liberalised. When an industry (or a firm) 'matures', then no protection is required. In this view, the argument is not against the basic tenets of comparative advantage. The argument is revolves around which commodities will have long-term comparative advantage as opposed to the current comparative advantage. Therefore this approach continues to carry the static characteristics of mainstream comparative advantage theory. To put it another way, the 'static-dynamic' version of the theory is not about creating competitiveness in a dynamic sense by conscious policies, but rather it is about accepting passively the possibility of low future comparative cost and protecting such industries until they grow up and become competitive in international markets.

Third, Schydlowsky argues that '[u]nder such realistic conditions [uncompetitive markets etc.] the policymaker needs to adopt an explicit comparative advantage oriented policy.'[21] This implies that the decisions of the policymaker create future comparative advantage. If competitiveness is created by the policymaker's conscious decisions, however, this cannot be called comparative advantage. Comparative advantage refers to specialisation based on static (short- or long-run) relative cost which conditions the options of policymakers. It is something that guides the policymakers in the production of a particular commodity. It is based on 'endowments' which cannot be altered. Before production takes place, those commodities that have potential for future comparative advantage must be identified based on the static long-run production function.

If the endowments and competitive advantages were created dynamically by the decisions of the policymaker, however, countries would not have any comparative advantages at any given time. What determines future comparative advantage is the relative future cost structure. The relative future cost structure, however, is determined by the decisions taken today. There may not be any other apparent current 'comparative advantage' apart from the decisions taken today which may bring future competitiveness. A country may not have any comparative advantage in the

[21] Schydlowsky (1984: 439).

production of a particular commodity when a decision is taken to produce it, but competitiveness can be developed through a combined process of production and protection. If a country decides to promote and protect a commodity, and if the cost of this commodity falls relative to others and become internationally competitive, this cannot be called comparative advantage, because future competitiveness is solely determined by the decisions taken today.

In this sense, the success of a country in international markets is determined by its ability to develop competitiveness by reducing cost through a combination of successful industrial policy, experience, ability to produce and develop technology and good luck (in the sense that someone else is not more successful). Thus, competitiveness is not based on any comparative advantage at the beginning but instead is based purely on the success of policymaking. In a dynamic world one cannot talk about comparative advantage because competitive advantages keep on changing. Countries create (or fail to create) their own competitive advantages. Whichever country is more successful in promoting selected industries will establish a competitive advantage in those selected commodities. The theory of comparative advantage is necessarily a static theory, as one could never truly predict future conditions. Thus, arguably, the only comparative advantage a country has is a successful industrial policy. As Hudson argues '[h]istorically the first endowment required for industrialisation has been a policy of protectionism.'[22]

In this sense talking about comparative advantage is nothing more than saying that a chameleon in reality is blue but it changes colour in different circumstances. If the chameleon changes colour under different circumstances, it does not have a colour. That is why this chapter suggests that the term 'comparative advantage' should be abandoned and the term 'competitiveness' should be used instead.

Fourth, even in a dynamic version of the theory, a country may have comparative advantage in primary and low value-added commodities. The logic of the theory suggests that if the future comparative advantage of a country is the same as the current comparative advantage, then the country should specialise in those commodities. In chapter one, it was argued that countries must avoid specialisation in low skill, low productivity and low value-added commodities, or commodities that

[22] Hudson (1992: 31).

have a very low income/demand elasticity and no future demand, whether or not they have short- or long-term comparative advantage. It is simply wrong to specialise in such commodities. Specialisation should be based on greater market opportunities, high elasticity of income, rapid technological progress, increased labour productivity and greater value-added in the future. Dynamic comparative advantage theory suggests that current relative cost may not be a good indicator of future relative cost, but does not question the logic of the theory itself. It does not question whether it is a good idea for a country to specialise in a commodity that has no future market opportunities. Dynamic comparative advantage accepts that countries benefit from trade based on their comparative advantage and only asserts that a long-term comparative advantage might be different than a similar short-term advantage. Once, however, the alleged benefits of static comparative advantage theory are rejected, the arguments for the benefits of dynamic comparative advantage theory also become doubtful.

In the static as well as dynamic versions of the theory a problem arises from the assumption that specialisation benefits everyone equally and there is no conflict in this process. This is, however, an unrealistic assumption. As argued in chapter one, specialisation and the division of labour might be beneficial from the society's overall point of view but not necessarily from an individual's point of view. Earnings in some professions and the value-added of some commodities are higher than others. Some jobs require more skills and training and thus pay well. In fact it is well-known that the new technologies require higher skills but at the same time adaptation of these technologies in production 'deskills' some people causing an increase in the income gap between skilled and deskilled workers. For example, extensive computerisation requires highly educated and trained professionals, such as computer programmers. The same computerisation, however, undermines the skills needed for other jobs, such as cashiers at the check-out. Thus, from the individual's point of view, it is preferable to be a computer programmer than a cashier. The move to such a division of labour might be inevitable and some individuals might have no other alternative but to accept certain jobs that provide a low income. This is not, however, necessarily true and acceptable for countries. Countries may want to avoid specialisation in such commodities even if they have short- or long-term (dynamic) comparative advantage.

The important thing is to determine the best possible commodity and try to produce it whether there is a short- or long-term comparative advantage in that commodity. In this sense, it can be argued that the static cost of protection might be smaller than the cost of non-protection. It might be preferable to avoid specialisation in the low value-added commodities and protect the high value-added commodities even if it involves an on-going static cost and continuous protection.

Finally, the usefulness of dynamic comparative advantage theory for industrial policy, and as a guide for the implementation of trade policy can be questioned. Static or dynamic, comparative advantage requires specialisation in those commodities for which a country may have short- or long-run comparative advantage. This requires information on the cost structure of domestic commodities as well as those of foreign competitors. Obviously, future 'comparative advantage' is not only shaped by the policymaker's own current actions but also by the actions of other possible competitors. In the static case, the relative cost structure is relatively easy to observe. In the dynamic case, however, it is almost impossible to observe future cost structure of potential competitors.

In conclusion, it can be argued that, static or dynamic, comparative advantage theory is misleading. Countries should avoid specialisation based on their short- or long-run comparative advantages but adopt sensible trade policies to develop competitiveness in carefully selected commodities which will bring long-term benefits. The next section investigates the theoretical arguments for the various alternative trade policies that developing countries might adopt.

4.3 IMPORT-SUBSTITUTION VERSUS EXPORT-PROMOTION

Despite the ongoing debate regarding the impact of import-substitution and export-promotion policies on economic development, these terms are not accurately defined in the literature. It is generally assumed that import-substitution and export-promotion policies are opposites and mutually exclusive. Consequently, they are presented as alternative trade strategies at a country's discretion.

During the 1980s and 1990s, export-promotion policies became popular and gained predominance among economists and in international organisations concerned

with 'development'. The popularity of the export-promotion strategy was boosted by a myth created about the development experiences of a number of Asian countries. Their success was attributed to the liberal trade policies that they allegedly adopted. Haberler (1987: 62), for example, argued that their success is fully explained by, and confirms, the neoclassical paradigm. Owing to the confusion over the concepts of export-promotion, trade liberalisation and import-substitution

> the conventional wisdom among economists has swung from import-substitution strategy to export-promotion strategy. [...] By the late 1960s, and particularly the late 1970s, professional opinion had indeed moved away completely from import-substitution and in favour of export-promotion strategy as a desirable option. (Bhagwati, 1986: 91)

Subsequent research, however, proved that neoclassical economists have been overly optimistic about the validity of their arguments in explaining this 'miracle'. Discussions about import-substitution and export-promotion as trade policies embody two related but distinct issues. The first is whether import-substitution and export-promotion policies are substitutes or are complements. The second is whether export-promotion is necessarily associated with trade liberalisation and a reduction in the role of the state. The experiences of the same Asian countries are increasingly employed against the neoclassical interpretation of the relative benefits of export-promotion and import-substitution policies. Their development experiences are now understood to be incompatible with the simplistic views of neoclassical economics. Based on the experiences of these countries, there is an increasing consensus that import-substitution and export-promotion are not mutually exclusive alternatives but rather complements. The import-substitution – export-promotion dichotomy derives from the static, two-sector neoclassical model. In a more dynamic model where the static parameters of neoclassical economics are allowed to change, however, import-substitution strategies are not considered as the opposites of export-promotion strategies. Firstly, import-substitution is seen as a precondition for export-promotion, and secondly, import-substitution and export-promotion can be implemented together. Therefore, import-substitution is sometimes called 'import protection as export-

promotion.'[23] The aim of this section is to clarify the confusion surrounding the definitions of these strategies.

Import-substitution strategies aim to promote production by substituting domestic goods for previously imported consumer goods with the help of a wide range of tariff and non-tariff barriers and exchange rate policies. Looking at it from a short-term, static-efficiency point of view, neoclassical economists believe that import-substitution policies, by creating barriers to free trade and preventing specialisation, reduce incentives of the local firms to cut costs and increase productivity; lead to monopolistic structures; distort prices and misallocate resources.[24] As will be discussed later in this chapter, this view originates from a misunderstanding of the meaning and the aims of such a strategy.

The concept of export-promotion is more controversial than it at first appears. For some, export-promotion requires a neutral strategy with no bias against exports.[25] According to others, however, export-promotion refers to policies which promote exports and does not suggest neutrality. Moreira (1995) points out the apparent definitional differences between two prominent neoclassical thinkers, Balassa and Krueger. Balassa defines outward-orientation as:

> Neutrality in the system of incentives, with effective rates of protection being on the average, approximately equal in import-substituting and in export activities.[26] (Balassa, 1989: 1667, cited in Moreira, 1995: 7)

From this perspective, import-substitution is seen to involve inward-looking policies with state intervention while export-promotion focuses on outward-looking policies

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[23] Krugman (1984: 180).

[24] The argument that import-substitution also precludes 'firms from taking advantage of economies of scale and specialisation' (Moreira, 1995: 5) is not an original neoclassical argument since neoclassical trade theory assumes constant returns to scale. This argument is produced later by the 'new growth theories'.

[25] According to Bhagwati (1986: 92), by export-promotion 'the literature now simply means a policy such that, on balance, the effective exchange rate for exports (EERx) is not significantly different from that of imports (EERm)'. There is no agreement, however, even among the neoclassical economists on this approach.

[26] As will be discussed later on, this view ignores the 'non-tradables' sector and the possibility of promoting both import-substitution and export-promotion. Thus, an equal level of effective rates of protection for both import-substitution and export-promotion activities simply means a zero level of

without state intervention. This approach allows us to locate individual economies along a continuum from open and liberal economies to close and heavy state intervention economies. The question then becomes one of simply determining whether or not liberal and open economies grow faster. This approach is based on an international free market price mechanism which allows countries to specialise in the production of particular commodities according to their comparative advantage. Static allocative efficiency gains suggest that greater openness yields better economic performance in terms of a higher level of output or income, if not in terms of a higher long-run rate of growth.[27] The removal of trade barriers expands the production and consumption possibilities by providing more efficient technology to transform domestic resources into goods and services. Thus, the efficiency gains from a better allocation of resources raises the level of national output.[28] From this perspective, export-promotion policies beyond neutrality are seen as ineffective as import-substitution since they also distort prices.

Kruger's argument, however, is clearly biased towards promoting exports:

> It is a set of policies that leaves relative domestic rewards for exporting (compared to importing) at least equal to, and possibly greater then, the rewards that would exist under free trade. (Krueger, 1985:197, cited in Moreira, 1995:7)

However, 'if one accepts Krueger's definition of export-promotion regime, the case for the free-trade argument looks muddled, since [...] there is no clear reason for a regime biased towards exports to have emulated the free-trade allocation.'[29] Thus, Balassa's definition is more compatible with the neoclassical model of international trade. The neoclassical approach can be demonstrated with the following figure,

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protection since both sectors cannot be protected at the same time according to the logic of the argument.

[27] Matin (1992: 5).

[28] A reduction of trade barriers also reduces other costs such as dead-weight losses arising from domestic monopolies; costs arising from scale inefficiency; technical inefficiency or X-efficiency and costs of rent-seeking and directly unproductive activities.

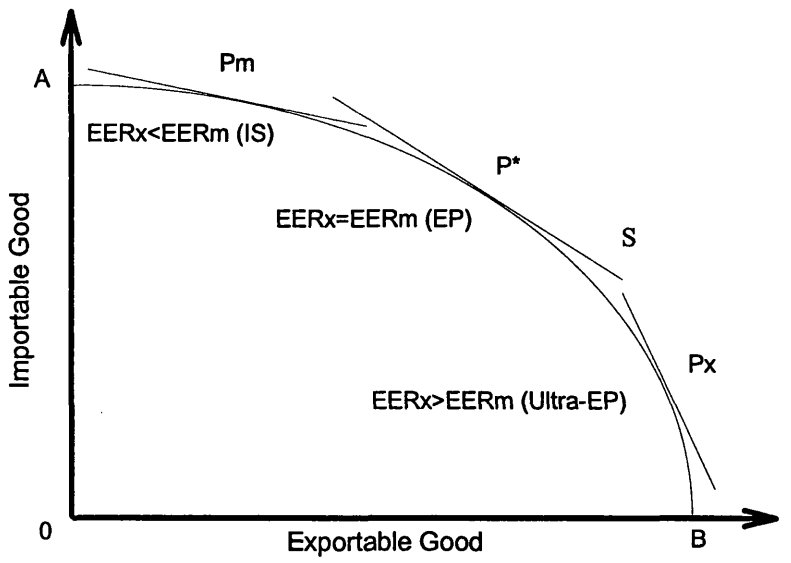
[29] Moreira (1995: 8).

borrowed from Bhagwati (1988), where classification of trade strategies is based on the standard two-sector production-function type framework.

Figure 4.2 illustrates, with a two-good model, the definitions of export-promoting (EP), import-substituting (IS), and ultra-export-promoting (ultra-EP) trade strategies. As Bhagwati explains,

> AB is the country's production possibility curve. With given international prices P*S, equilibrium production would be reached at P* under unified exchange rates which ensure that the relative goods prices domestically are equal to P*S. Therefore, at P*, we have EERx=EERm, where EER refers to the effective exchange rate. This is defined as the EP strategy. [...] When the incentive to produce the import-competing good exceeds that to produce the exportable good, because of a tariff or overvalued exchange rates, for example, production shifts to Pm. Here, EERx<EERm. This is the IS strategy. [...] If the biased incentive goes in the other direction, the relative incentives imply EERx>EERm and production shifts to the right of P*, to say Pm. This is defined as the ultra-EP strategy. (Bhagwati, 1988: 49)

Figure 4.2: Import-substitution and export-promotion



From this figure it is apparent that import-substitution and export-promotion are necessarily substitutes and that export-promotion necessarily requires trade liberalisation. For example Bhagwati argued that a country can employ either an export-promotion or an import-substitution trade strategy but not both because resources can only be employed to produce either exportables or importables.[30] Thus,

> there is a built-in negative relationship between EP and IS activities, and an IS strategy is necessarily an anti-export one. If importable-goods production increases, exportable-goods production will have to decrease, and vice versa. Consequently, if a country wants to promote exports, it will have to liberalise its import controls. (Liang, 1992: 451)

Such categorisation of trade theories is more problematical than neoclassical writers recognise. The above approach is proven to be too simplistic to deal with the complex realities of developing countries and displays logical inconsistencies. The complication arises from the narrow definition of these strategies in the neoclassical approach.

First, to call neutrality of incentives (EERx=EERm) export-promotion is contradictory since neutrality implies that neither sector is protected or promoted.[31] Furthermore, trade liberalisation and export-promotion should be separated from each other. Export-promotion, by definition, requires promotion of exports and thus is not compatible with the free trade argument of the neoclassical approach.[32] Thus, it would be more convenient to classify policies as 'import-substitution – free trade – export-promotion' rather than 'import-substitution – export-promotion – ultra export-promotion'. From the figure, it is clear that any point beyond P* towards B (which represents export-promotion or ultra-EP according to Bhagwati's classification) is as

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[30] Bhagwati (1986 and 1988).

[31] Moreover, neutrality of incentives does not necessarily mean imports are not substituted since, as will be argued later on, exports and imports can be both protected and promoted. In this case, neutrality policy (EERx=EERm) means both sectors are equally protected and promoted.

[32] Bhagwati tries to justify this classification by arguing that 'export-promotion strategy came to be defined in the academic literature as the one with bias-free incentives simply because the empirical studies of the four Far Eastern economies [...] strongly suggested that these successful outward-oriented developers were closer to neutrality than to a substantial positive bias in favour of exports.' [Bhagwati (1988: 32)] This argument, however, is not only logically inconsistent but also empirically flawed. Recent research has shown undeniably that these countries promoted exports.

inefficient as import-substitution according to the logic of neoclassical trade theory because market prices are distorted. Indeed, as Streeten (1982) argues, in its static form '[i]t is just as possible to have inefficient export policies as it is to have inefficient import-substitution.'[33] Moving from an import-substitution strategy to an export-promotion strategy may eliminate some distortions but it may also create others. Thus, it can be argued that even though conceptually more accurate, Kruger's approach is incompatible with the neoclassical approach.[34] The ultra-EP strategy (what should be called export-promotion) is just a theoretical possibility, not a pertinent option, according to the basic tenets of the neoclassical approach and contradicts the principles of the theory. This simply means that export-promotion as well as import-substitution strategies make sense once the short-term, static approach of the neoclassical model is abandoned and a long-term dynamic perspective is adopted.

Once this important point is clarified, export-promotion strategy, like import-substitution strategy, is incompatible with the neoclassical approach. As non-free market (interventionist) policies, their relationship should be analysed from a more dynamic perspective. Since both policies require state intervention, they are structuralist in their nature. As they both require state intervention, it is possible to argue that they are compatible with each other and therefore should be seen as complements rather than substitutes. Many rightly argue that trade orientation in terms of the trade ratio should be divorced from trade liberalisation.[35] As the 'East Asian Miracle' countries demonstrate, strong state intervention and outward trade orientation are not only compatible, but also state intervention is essential for a successful and sustainable outward trade orientation.[36] They can be considered as

[33] Streeten (1982: 162).

[34] Bhagwati (1988: 33) who also argues in favour of state intervention to promote exports, contradicts the basic logic of his own theoretical argument. It is not clear in his argument why an import-substitution strategy should be harmful to the economy whereas export-promotion should be beneficial even though they both distort prices equally.

[35] See for example Liang (1992) and Moreira (1995).

[36] Schydlowsky (1984) went further than this and suggested that even comparative advantage theory should not be confused with either trade liberalisation or protection. He argues that 'for a country to produce those things in which it has a comparative advantage means nothing more than that the country is doing what it can do best. [...]; it does not imply adoption of free trade or the imposition of protection.' (Schydlowsky, 1984: 439)

different levels of the same development strategy. The static neoclassical perspective ignores this dynamic aspect of trade orientation.

Moreover, even if Balassa's definition is accepted, outward-orientation in terms of trade ratio should still be disassociated from trade liberalisation, because trade liberalisation does not guarantee more openness. When liberalised, an economy may become even more closed. It is apparent from figure 4.2 that a country's openness in terms of trade is determined by world prices when a country adopts liberalisation policies. This means that a country may adopt a liberalisation strategy (EP in the figure) and export less if initial export-promotion policies are removed or if world prices change and shift nearer to point A. In the above figure, the world price line is drawn nicely to be tangent to the AB curve in the middle (point P*). World prices, however, might be tangent to the AB curve anywhere, i.e. at Pm or even closer to A.[37] In this case liberalisation would mean no exports. Thus, many advocates of export-promotion admit that 'there is indeed an important role for government even in an export-promotion strategy.'[38]

Finally, as Liang (1992) shows, the production of exportables does not necessarily require a reduction in the production of importables once the two-sector model is replaced with a more realistic three-sector model. In a model where economy is divided into three sectors; exportables, importables and non-tradables, not only is it possible to promote both import-substitution and export-promotion,[39] but it is also possible to have anti-import-substitution and anti-export-promotion policies which would benefit the non-tradables sector.

Liang also separates the 'intended policy incentives' from the 'actual trade patterns'. He argues that 'in a three-sector model, a positive import-substitution incentive does not always lead to an increase in the production of importable (exportable) goods, as is the case in the two-sector model.'[40] For example,

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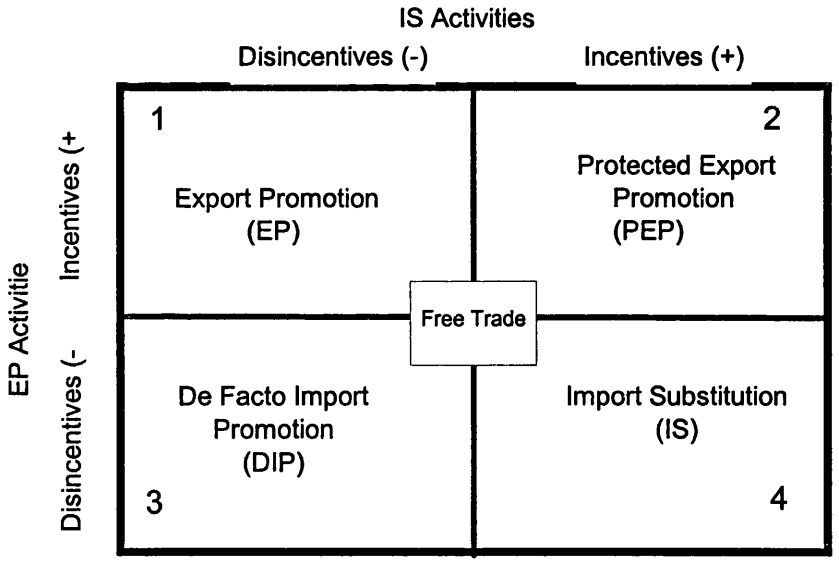
[37] This is often the case for developing countries when, for example, a fall in the terms of trade occurs as a result of a fall in prices of exportables.
[38] Bhagwati (1986: 94).
[39] '... with the home goods sector bearing the burden of both import protection and export subsidy' (Liang, 1992: 453)
[40] *Ibid.*

a forced increase of exports combined with a sharp reduction of imports, a pattern commonly seen in an austerity programme during the time of balance of payments crisis, does not represent positive incentives for either export-promotion or import-substitution activities. Under such an austerity program, there is no real increase of export incentives and that kind of 'export at any cost' is neither effective nor sustainable. (Liang, 1992: 453)

He then identifies five mutually exclusive incentive structures. In Figure 4.3, the horizontal axis represents the policy incentives (+) or disincentives (-) for import-substitution activities whereas the vertical axis indicates the policy incentives (+) or disincentives (-) for export activities. At the centre, the two incentives are neither positive nor negative.

Figure 4.3: Liang's classification of trade policies



Quadrant 1 represents a pure export-promotion strategy where export activities are promoted while import activities are liberalised. This quadrant corresponds to Krueger's export-promotion definition. Quadrant 2 represents coexistence of positive incentives for import-substitution and export-promotion which Liang calls 'protected export-promotion'. Here domestic firms are protected in their home markets, but encouraged to export and compete internationally. Quadrant 3 represents a bias

against export-promotion as well as a bias against import-substitution. Liang calls this 'de facto import promotion' which is a 'debt-led' growth strategy that cannot be sustained in the long-run. Quadrant 4 represents a typical import-substitution regime where imports are restricted and exports are discouraged. The centre point represents Bhagwati's definition of a neutral, free trade strategy.

A critique of Liang's approach

Liang's model is more realistic compared to Bhagwati's two-sector model in that it allows a country to choose from a wide range of policy options. However Liang's model suffers from the following weaknesses.

First, his three-sector model suggests that a country can increase the production of exportables without reducing the production of importables if the production of non-tradables (home goods) is reduced. However, first, a reduction in the production of non-tradables may not be possible. Second, if it is possible it may not be desirable. Third, even if possible and desirable there must be a limit to this and that limit could probably be consumed rather quickly. After the limit is reached, the possibility of producing more tradables will be quickly exhausted. Thus, Bhagwati's two-sector model where more exportables can only be produced by reducing the production of importables will be relevant again. For tradables, however, there is no such limit. In theory, a country can reduce the production of importables to zero and produce only exportables.

The reason why a reduction in the production of home goods might be difficult is that the price elasticity of demand of the home goods might be rather high and therefore large price changes might be needed to prompt small quantity changes. Since home goods cannot be traded, any reduction in their production means a reduction in consumption, thus a change in consumption pattern. This may be undesirable, unnecessary or impossible. The benefits of reducing the production of non-tradables to produce more tradables are not clear. This is not the case for tradables since a shift from importables to exportables does not require a change in the consumption pattern.

Greenaway and Milner (1987), in an earlier article and using a similar three-sector model, rightly argue that when cross elasticities between tradables and home goods are considered, it may be impossible to promote both exports and import-substitutes. This is because an increase in the prices of tradables (through import tariffs and export subsidies) will reduce the supply and increase the demand for home goods and thus increase the price of home goods in relation to tradables and restore the initial relative prices. For example, a devaluation which increases the prices of importables and exportables relative to home goods would promote production of both importables and exportables. Thus, a devaluation is the simplest way to implement both import-substitution and export-promotion strategies, assuming that all importables can be produced domestically. This, however, cannot be sustained for long since it causes domestic inflation and restores the initial level of relative prices. Liang only considers cross elasticities of tradables against each other and ignores it for home goods.[41]

Greenaway and Milner, however, go to another extreme and argue that implementation of both import-substitution and export-promotion strategies will be unsuccessful because such diverse and conflicting policies neutralise each other and leave the final outcome unaltered. Even if their general equilibrium model is assumed to be accurate, this argument can be discredited by the following example. Greenaway and Milner's arguments (and this is also true for Liang) are primarily concerned with the relative price changes of the protected/promoted sectors. It is however, theoretically possible to promote sectors without changing relative prices and thus avoid all the complications involved due to substitution and cross price elasticities. Given the free market relative price levels, a non-distortionary unified tax on all sectors (which would leave the relative prices unaltered) would raise funds to subsidise/promote import-substituting and export-promoting sectors without changing the relative prices of the promoted sectors. Since free market determined relative prices do not change, we do not need to be concerned with the cross elasticities between tradables and home goods.

[41] Greenaway and Milner, however, use a general equilibrium model which makes the use of protection or promotion unnecessary to start with.

Moreover, under free market conditions export-promoting and import-substituting sectors are considered to have less than average profitability by definition. Their profitability might be increased by transferring some part of the profitability of the home goods sector without reducing its supply since the home goods sector is still the most profitable sector.

What is more, Liang and Greenaway & Milner consider the sectors as a whole: export-promotion involves the whole export sector that is promoted and import-substitution means that the whole import competing sector is protected. This does not allow for export-promotion and import-substitution within the sectors. Export-promotion does not, however, necessarily imply the promotion of all export sectors. If all export sectors were to be promoted, a devaluation would be enough. Devaluations, however, are non-discriminatory. The aim of a strategy that promotes exports without devaluations is to discriminate among the sectors and to promote only selected ones. For example, profitable traditional exports can be taxed to promote non-traditional exports. The overall promotion of export sectors, such as through devaluation, does not discriminate between profitable and unprofitable export sectors. The promotion of exports would increase exports not only by increasing the profitability of existing export items but also by making other items profitable to export. Thus, devaluation would make existing export items more profitable and unprofitable items just profitable to export. When there exists a wide range of items to export, their profitability will be different. Export-promotion in the form of selective subsidies would increase exports without a devaluation of the currency. In this case the export sector is financed by other areas of the export sector rather than through import-substituting or non-tradable (home) sector. Thus, in reality it is possible to promote certain industries in all three sectors by financing them with the proceeds from profitable industries.

A second problem with both approaches is the terminology used. The concepts of exportables and importables are rather vague and are derived from static comparative advantage theory where all countries have comparative advantage in the production of some commodities and comparative disadvantage in others. In the dynamic case, however, the distinction between importables and exportables becomes ambiguous. The whole point of protection might be to turn importables into

domestically produced commodities or if possible into exportables.[42] When the aim of a country is to turn importable commodities into exportables, the arguments that treat import-substitution and export-promotion as mutually exclusive alternative strategies lose their meaning. In static comparative advantage theory exportables and importables are seen as exagonously determined and to export more, exportables must be promoted. To promote domestic production of importables, they must be protected. In this case, export-promotion only refers to those commodities that are classified under 'exportables' while import-substitution only refers to commodities classified under 'importables'. Once the relationship between static comparative advantage theory and this categorisation (importables and exportables) is understood, however, there is no point in talking about import-substitution and export-promotion since free trade is the best strategy. However, the aim of protection and promotion might be to turn importables into exportables rather than to increase the production of already 'exportable' items. In this case, the distinction between importables and exportables as well as between import-substitution and export-promotion disappears.

As argued earlier, once trade is seen as a dynamic process where today's decisions determine tomorrow's competitiveness, exportables and importables cannot be taken as given but are created in the development process. Static comparative advantage theory suggests that specialisation is based on the assumed comparative advantages of today. The concepts of exportables and importables are strictly related to static comparative advantage theory. Once static comparative advantage theory is rejected, the concepts cannot be used for analytical purposes.[43] Although Liang's arguments add another dimension to static comparative advantage theory, they do not remove its static nature.

Third, both Liang's and Greenaway & Milner's arguments are based on the assumption that all of the imported commodities can be produced domestically. Imported commodities, however, can be divided into two categories. The first includes those items that cannot be produced domestically and the second includes

[42] When, for example, devaluations are used to promote exports, not only do already 'exportable' commodities become more profitable but also (assuming that they can be produced domestically) some of the previously 'importable' commodities may become profitable to export. The increase in exports does not usually come from increased production of the same 'exportable' commodities but from new commodities that become exportable.

those items that can only be produced more expensively. An overall, non-selective protectionist policy, such as a devaluation, would harm a country by making the imported commodities more expensive if it fails to turn some of the imported commodities into exportable commodities as they cannot be produced domestically. In many developing countries, for example, the capital goods sector is either small or non-existent and these goods need to be imported. One way to encourage domestic investment by keeping the price of capital low is to have multiple exchange rates or an 'overvalued' (compared to 'market determined') exchange rate rather than to rely on competitive devaluations.

Fourth, both Liang's and Greenaway & Milner's arguments are based on the assumption of full employment of resources. That is why the production of tradables can only be increased by reducing the production of non-tradables. But when unemployment is allowed, the production of tradables as well as non-tradables can be increased at the same time. If this is the case, however, the relationship between import-substitution and export-promotion is rather different than that which is depicted in the above models. Here it will be argued that not only are import-substitution and export-promotion compatible, but also the production of importables (import-substitution) and the importation of importables are not mutually exclusive, not at least after a certain level of international competitiveness is achieved.

A low-income country may have only few 'exportables' and many 'importables'. If one allows for less than full employment and rejects the assertion of comparative advantage theory that all countries have at least some commodities to export at all times, then it is reasonable to argue that a country can implement import-substitution and export-promotion policies simultaneously. As argued earlier, 'importables' can be divided into items that cannot be produced domestically and other items that can only be produced less efficiently. The importation of items that cannot be produced domestically may not be avoided, particularly if these items are essential for domestic production. If at the earlier stage of economic development, a country cannot export enough to import necessary items which cannot be produced domestically, the production of other 'importables' and 'exportables' can be increased

[43] 'Exported goods' and 'imported goods' should be used as alternatives to 'exportables' and 'importables'.

without reducing the production of home goods. The country could try to develop competitiveness in some commodities by promoting exports and at the same time try to produce more 'importables' by protecting its domestic market since 'importables' cannot be imported because of a lack of sufficient exports and foreign currency. In this case, import restrictions might be necessary not only to encourage domestic production but also to discourage luxury imports. At this stage, export-promotion and import-substitution are adopted simultaneously. The production of exportables and importables can be increased together either by reducing non-tradables (Liang) or without reducing the production of non-tradables if resources are not fully employed.

To sum up, at the beginning of the development period, a country with little 'exportables' and many 'importables' may find itself unable to import 'importables' because it cannot export enough. On the one hand, the production of 'exportables' and on the other hand, the production of 'importables' must be increased since there is not enough currency for necessary imports. In this process, some 'importables' may become exported or non-traded goods due to foreign currency shortages. Ironically, in this process of increasing both 'exportables' and 'importables' (adopting both import-substitution and export-promotion), the country can also increase the importation of 'importables' as its foreign currency reserves accumulate.

When (or if) a country increases its competitiveness in international markets and secures sufficient exports, it does not have to (but it can for full employment purposes) 'import-substitute' everything since this would mean a permanent trade surplus. To secure full employment, it may try to export as much as possible and import as little as possible.[44] But this will mean a permanent trade surplus and would be unsustainable internationally because other countries would retaliate against such actions. If the country decides to maintain a balanced trade when enough exports are secured, imports can be liberalised since a foreign exchange shortage no longer exists. But trade (import) liberalisation first requires a solid base of competitiveness. In this case, supporting import-substituting and export-promoting sectors may help the home goods sector by reducing the cost of imported commodities (such as machinery) which might be required in the production of home goods.

[44] This would be a sort of mercantilism. Taiwan, for example, pursues such a policy. Taiwan is said to have the largest foreign reserves in the world.

Taken together, this means that trade liberalisation can only be possible when international competitiveness is secured. But in ever competitive international markets, long-term competitiveness can never be guaranteed and therefore even industrial countries are inclined to be protectionist. There might be times when countries may adopt more liberal trade policies, but free trade as described by neoclassical economists can exist only in theory.

4.4. EXPORT PESSIMISM

Development economics was born in an atmosphere of export pessimism at the end of the World War II.[45] Export pessimism, which was put forward by Prebish, Singer, Myrdal, Hirschman and Nurkse, argued that there existed an unequal distribution of the benefits of international trade and diminishing external opportunities for developing countries. These ideas were very influential among post-war intellectual thinkers and policymakers. Proponents of export pessimism put forward two broad and important arguments involving the demand elasticity of exports from developing countries and growing protectionism in developed countries.

Prebish and Singer were concerned with a structural tendency for the terms of trade of primary products (the main exports of developing countries) to fall relative to manufactured products. The underlying economic argument in explaining this tendency can be divided into four sections: 1. Primary products have low price elasticities of demand and supply which make exporters of these commodities more vulnerable to external shocks and fluctuations. 2. Demand for primary products expands less than for manufactured commodities (particularly agricultural products - Engel's Law) since primary commodities also have low income elasticities of demand and thus total income earned by exporting these commodities will tend to fall relatively. The tendency towards a balance of trade deficit, which is caused by the relative demand fall, may also cause further deterioration in the net barter terms of trade (NBTT). 3. The technological superiority of the industrial countries means that the prices of their manufactured exports embody a rent element for innovation. 4. The monopolistic structure of labour and commodity markets in industrial countries means

[45] Bhagwati (1988: 27).

that the results of technological progress and increased productivity generates higher wages and profits rather than lower prices. In developing countries, where labour is less organised and markets are more competitive, however, increased productivity is more likely to lower prices, benefiting foreign consumers rather than domestic producers.

Nurkse put more emphasis on the new technologies that may economise on the use of primary commodities and may shift demand from natural products to synthetic substitutes. He also argued that markets in industrialised countries simply cannot accommodate imports from developing countries on a sufficient scale. As economic development and exports accelerate, industrial countries become increasingly more protectionist, particularly against developing countries. He argued that as long as developing countries' exports remained heavily dependent on primary products and that the rate of growth of industrial countries' demand for primary products declined, developing countries would find it increasingly difficult to sustain their export and economic growth rates. Nurkse concluded that 'it is no longer so certain that the less industrial countries can rely on economic growth being induced from the outside through an expansion of world demand for their exports of primary commodities.'[46]

A more sophisticated version of export pessimism in terms of protectionism by developed countries argues that developed countries may be able to adjust to the export potential of manufactures from developing countries in the long-run but this adjustment will not be rapid enough.[47] A growing number of non-tariff barriers, which replaced tariffs in developed countries, are considered to be evidence which supports this argument.

The 'fallacies of composition' is another important argument produced by export pessimists who argue that there is a limit to the level of developing countries' manufactured exports which can be absorbed by developed countries. Even if some developing countries (i.e. 'East Asian Miracle' countries) can succeed in increasing their manufactured exports substantially and rely upon outward-orientation strategies, for all or a large number of countries (particularly larger ones) it would probably be self-defeating. This could occur as a result of the elasticity of export demand for

[46] Nurkse (1961: 246).
[47] See Yeats (1977), Laird and Yeats (1988) and Winters, Nogues and Olechowski (1985).

developing countries' exports and a possible increase in developed countries' protectionism. Faini and Clavijo (1992) have argued that the elasticity of export demand for developing countries is smaller than the same elasticity for an individual country. Thus, 'export competition occurs to a large extent among developing countries. As a result, exchange rate policies lose, globally, much of their effectiveness and demand from industrial countries is again a major determinant of LDCs' export performance.'[48]

The protectionist version of export pessimism argues that a substantial increase in developing countries' export activity which targets developed countries would be met by more protectionist measures ('neo-protectionism') by developed countries. This is particularly important given the rise of trading blocs, such as the European Union and others.[49] Thus what is plausible for one (or some) is not necessarily plausible for all. That is why, it is argued, the experiences of the East Asian Miracle countries cannot be generalised or used to produce the same results for other developing countries. Cline (1982) analysed the consequences of export expansion of developing countries on the scale of the East Asian countries in a simulation exercise and concluded that 'it would result in untenable market penetration into industrial countries.'[50] A hypothetical expansion of exports from developing countries at the same level as the 'Four Tigers'[51] would mean a seven-fold expansion of total exports from developing countries and a rise in their share of the market for manufactured imports from 1.7 to 60.6 percent for all seven industrial countries.[52] Lutz and Singer (1994) also provide empirical evidence to reject the 'small country' and 'exogenous traded-goods prices' assumptions and argued that terms of trade considerations should be taken into account when several countries liberalise their trade simultaneously.

Another argument for export pessimism was put forward by Lewis (1980). He argued that falling economic growth rates in developed countries, which once increased demand for developing countries' primary commodities, would have a

[48] Faini and Clavijo (1992: 866).
[49] According to the Financial Times (1996) more than 100 regional trade arrangements have been formed, 29 since 1992 and almost all of the roughly 120 members of the World Trade Organisation belong to one or more of them.
[50] Cline (1982: 88).
[51] Hong Kong, Singapore, South Korea and Taiwan.

negative impact on developing countries' export performances. Thus, South-South trade now has to be an alternative to South-North trade.

In conclusion, all the export pessimism arguments suggest that underdevelopment in low-income countries is largely the result of their dependence on primary and agricultural exports, and the solution is to replace these commodities with industrial commodities through import-substitution policies behind protective barriers. '[T]he structure of the economies of the developing countries had to be changed in fundamental ways if they were to compete on equal terms in the world markets, and a market mechanism could not bring about this sort of structural change.'[53]

The critiques of export pessimism

Critics of export pessimism are not in short supply. Their argument is not only that '[t]he export pessimism following Word War II was to prove unjustified by the unfolding reality'[54] but also that '[t]he trade pessimism that underlay the import-substituting industrialisation policy has turned out to be a self-fulfilling prophecy: neglect of exports has led to poor export performance.'[55] Including the 1950s and 1960s, world trade has grown much faster than world production and countries like the 'Four Tigers' have proven that 'the economies that shifted quickly to an export-promotion strategy experienced substantial improvements in their export performance.'[56]

The critics of export pessimism challenge the empirical validity of the declining terms of trade argument. Prebish's work was criticised on a number of points.[57] First, he based his argument only on the NBTT of the UK which was not representative of the industrial countries as a whole. Second, the primary commodities that were imported from industrialised countries were not separated. Third, exports were valued *f.o.b.* whereas imports were valued *c.i.f.*, thus the improvement in the

[52] Canada, France, Germany, Italy, Japan, United Kingdom and United States.
[53] Bruton (1998: 906).
[54] Bhagwati (1988: 28).
[55] Streeten (1981: 214).
[56] Bhagwati (1988: 28).

UK's NBTT could be due to a fall in transport costs. Fourth, quality improvements in manufactured commodities were ignored. Schydlowsky (1984), argued that 'the historical evidence regarding long-run decline in the terms of trade of primary producers is very much in doubt. Price trends of different primary products are so divergent as to render any broad generalisation virtually impossible.'[58] Schydlowsky also suggested that 'even if the historical record of declining terms of trade could be firmly established, its usefulness as a guide to future price trends is doubtful. This is because the recent popular observation that the world is entering an era of increasing resource scarcity argues for a break with past trends in favour of improving terms of trade for primary producers.'[59]

Streeten (1981) argued that not only is there no evidence of a secular deterioration of the NBTT of primary products in relation to manufactured products but also that the measured NBTT between them tends to overstate the deterioration or understate the improvement.[60] This is due to three reasons: 1. Product innovation and quality improvements occur mainly in industrial products and thus what appears as a worsening of the terms of trade reflects in many cases new and better industrial products. 2. New industrial products subject to increasing returns often have initially high prices and become cheaper as they become more plentiful. 3. Export price statistics of agricultural products of developing countries are often based on commodity markets in London or New York. As a result, lower freight costs combined with constant *f.o.b.* prices will show up, misleadingly, as lower prices of agricultural products. He also suggested that uneven distribution of the benefits of trade due to the movement in relative prices can be remedied by more inflation or an appreciation of the exchange rate which would change the relative prices of these commodities in the periphery.

Grilli and Yang (1988) argued that a decline in the NBTT for primary commodities was largely the result of rapid productivity increase. Panoutsopoulos (1992) also recognised the decline in NBTT but argues that 'countries that stimulated exports of primary products have benefited from increases in long-term real earnings'

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[57] See Spraos (1980: 108-119) and Tandon (1985: 156) for details of these critiques and their evaluation.
[58] Schydlowsky (1984: 447).
[59] *Ibid.*

since 'declining prices of primary exports have frequently been offset by improving income (and single factoral) terms of trade.'[61]

Critics of export pessimism are not impressed by the argument of rising protectionism in the developed countries either. Bhagwati (1988) argued that it is worth looking at the actual trade flows. He suggested that, adjusting for the income effects of the last recession, it is not clear that the actual protectionist effect on trade has been sufficiently severe to make us fear that the world trade order has begun to collapse.

Streeten (1981) argued that it is not consistent to argue that the rich countries, on the one hand, condemn the poor countries to remain producers of agricultural commodities and, on the other hand, that they do not buy enough of these commodities because they want to protect their own producers. He also argued that a reduction in agricultural protection for advanced countries may hurt developing countries since first, it may increase world food prices by reducing production and thus food importing poor countries may lose, and second, an accelerated shift of resources into manufacturing in the advanced countries might make manufactured exports from developing countries less competitive and industrialisation more difficult. Thus, he argued, if trade pessimists are right in their argument that reducing dependency on agricultural exports and promoting industrialisation would benefit developing countries in the long-run, they should have recommended even higher agricultural protectionism in the industrial countries which, in turn, would give the poor countries the incentives to industrialise.

Many critics of export pessimism admit that industrialisation is necessary for successful economic development and for a successful and sustainable outward-orientation. They argue, however, that export pessimism arguments regarding the level of industrialisation in developing countries is not acceptable because many developing countries have managed to increase the share of manufactures in their total exports.[62]

Bhagwati notes that the post-war period was marked by a dramatic shift in the export composition of developing countries toward manufactures. He argues that

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[60] Streeten (1981: 216).
[61] Panoutsopoulos (1992: 14).
[62] See Panoutsopoulos (1992).

> [t]he most compelling aggregate statistics show that during the prosperous 1960s, developing countries' exports of manufactures grew nearly twice as fast as the industries' income. The expansion of developing countries' trade over the 1950s and 1960s occurred as protection in the industrial countries was diminishing sharply as a consequence of first the elimination of quotas and then the reduction in tariffs. Even during the troubled 1970s, developing countries' exports of manufactures grew more than four times as rapidly as the industrial countries' income. (Bhagwati, 1988: 30)

The fallacies of composition argument was also targeted by the critics. Martin (1993), for instance, criticised Faini and Clavijo's arguments for adopting a partial equilibrium model 'even though the problem [was] patently general equilibrium in nature and involves interlinkages between imports and exports.'[63] Hill and Suphachalasai (1992) dismissed export pessimism arguments by focusing on Indonesia and Thailand. They argued that even under 'multi-fibre arrangements' these countries managed to increase their exports. Hughes and Waelbrock (1981) dismissed Cline's idea of a link between increased market share of developing countries exports and protectionism in developed countries by arguing that such a link is not so strong since the market share of developing countries in many important export products is very small. Panoutsopoulos (1992: 14) also criticised Cline's model for failing to incorporate changes in the composition of demand and supply in either the developing or the industrial countries and failing to take into account rising real wages in rapidly growing developing countries.

Bhagwati (1986 and 1988) was not impressed with the fallacies of composition arguments either. His criticism was based on the following reasons: 1. Export-promotion strategy simply implies eliminating the bias against exports. There is no reason to expect that all developing countries will increase their exports to the same share of GNP as Korea or Taiwan. 2. The share of developing countries' exports in developed countries' markets is relatively small. Thus, absorptive capacity is not a plausible source of worry. 3. Policymakers usually focus on already existing markets

[63] Martin (1993: 160).

and this creates export pessimism. When import-substitution policies are removed and incentives to export exist there is an enormous capacity of wholly unforeseen markets to develop. 4. Export pessimists ignore the potential for intra-industry specialisation which leads to increased mutual trade in similar products rather than to massive reductions in the scale of output in industry groups, as trade opportunities open. 5. Trade possibilities among the developing countries should not be ignored.

Poon (1994) recognises the difficulties that might be caused by unfavourable demand conditions. He dismisses export pessimism, however, by arguing that tropical countries can offset unfavourable demand conditions by being competitive in their exports. Lewis's argument on the influence of declining economic growth in developed countries was dismissed by Riedel (1984 and 1988) who argued that the export performances of developing countries are determined by supply rather than demand factors. Many others argued that developing countries' exports were in fact highly responsive to price changes and thus competition among developing countries would not only redistribute the same amount of exports among them but also would increase total exports.[64]

The counter arguments

The critics of export pessimism raised important issues which were aimed at weakening the arguments of the export pessimists. Nevertheless, in this section it will be argued that the theoretical foundations of export pessimism is, in general, correct and that the empirical evidence supports the argument.

The arguments on the NBTT are inconclusive and there is no agreement among economists about whether there is a long-term tendency for the prices of primary products to decline. The majority of recent empirical works, however, seem to support the declining NBTT argument, particularly for the post-1980 period.[65] Bleaney and Greenaway (1993) argue that the ratio of primary product prices to those

[64] See Rittenberg (1986) and Moran (1988).

[65] See J. Spraos (1980), Malhotra (1988), Lucke (1993), Sapsford and Balasubramanyam (1994), Gafar (1995), Karshenas (1998). Cuddington (1992) on the other hand argues that the Prebisch-Singer hypothesis should not be considered as a universal phenomenon. Interestingly, even some World Bank and IMF publications recognised the relevance of the declining NBTT argument (see Sapsford and Singer (1998) for details).

of manufactured goods was stable from 1925 to 1980, after which there was a significant fall.[66] They argue, however, that generalisations about the relative prices of primary products as a group might be misleading since separate component series (metal, food, non-food) display dissimilarities. Karshenas (1998) argues that primary commodity exporters generally witnessed violent adverse terms of trade movements during the 1980s.

Whatever the empirical validity of the declining NBTT argument, it can be argued that the logic of the arguments still holds. In other words, even if it is proven that the NBTT is not declining for the products of primary and agricultural producers, this does not invalidate the falling terms of trade argument itself for the reasons set out in the following pages.

First, Schydlowsky's argument on the terms of trade for primary commodities (that increasing scarcity in the availability of the primary products may increase their terms of trade) is overoptimistic, if not misleading. The future is unknown and even though one cannot rule out the possibility of an increase in the prices of such products (particularly non-renewable ones), it remains as a small theoretical possibility. As Nurkse (1953) argues, the possibility of new technologies (such as new recycling techniques or a shift from natural to synthetic materials) which may reduce demand even further for primary commodities is perhaps a more realistic scenario. For example, since the invention of synthetic rubber, absolute demand for natural rubber has fallen.

Second, one cannot realistically expect the NBTT for primary commodities to decline forever. There must be a limit to this decline, and an absence of a further decline cannot be evidence against the theory. Indeed Cuddington and Urzua (1989) argue that 'primary commodity prices (relative to manufactures) experienced an abrupt drop after 1920. Apart from this one-time structural shift, however, there is no evidence of an ongoing, continual downtrend in the relative price of primary goods.'[67] Whether or not there is a further tendency for primary commodity prices to decline, the fact remains that the NBTT did not recover from its sharp drop after 1920 and that the dominant feature of primary commodities is their low value-added. Therefore,

[66] Reinhart and Wickham (1994) confirm this findings and add that this weakness in commodity prices is mostly secular, stressing the need for export diversification.
[67] Cuddington and Urzua (1989: 441).

specialisation in the production of such commodities is not advisable for developing countries.

Third, the NBTT, which only compares the prices of commodities, must be separated from the factoral terms of trade (FTT) which takes productivity increase into account. There are two types of FTT: single factoral terms of trade (SFTT) and double factoral terms of trade (DFTT). The formulas for these are as follows:

$$SFTT = (Px.Zx)/Pm \quad \text{and} \quad DFTT = (Px.Zx) / (Pm.Zm)$$

where Px and Pm are export and import prices, Zx and Zm are indices of productivity in the production of exports and imports. The DFTT can also be written as

$$DFTT = (Px/Pm).(Zx/Zm),$$

in terms of the relative prices (or NBTT) and relative productivity changes. Normally, relative prices must change according to relative productivity changes. For example, if productivity in export items increases, the price of export items would decrease in the same proportion to leave DFTT unchanged. If export prices do not decrease according to the productivity increase, DFTT would increase. In other words, simple observations of the NBTT do not provide any meaningful results because the causes of the change in the relative prices of primary and industrial commodities may take different forms. A fall in export prices because of a productivity increase is a rather different thing than a fall in export prices because of a demand fall. In this sense, a fall in the terms of trade due to a productivity increase must be separated from a fall in the terms of trade due to demand deficiency. This means that the NBTT for primary commodities in relation to manufacturing may (and should since productivity increase in manufacturing is assumed to be larger than in the primary sector) increase due to a productivity increase in manufacturing. However, the DFTT may decrease if prices for manufactures decline less than the productivity increase. Indeed, Sarkar (1994) argues that technical progress in the South has a declining impact on the Southern NBTT while technical progress in the North does not have a similar impact on the Northern NBTT. In the absence of an increase in the NBTT for primary commodities

the fact remains that the DFTT might be decreasing and consequently the benefits of trade may be unequally distributed. Thus, Streeten was right in arguing that 'in the world economy there are forces at work that make for an uneven distribution of the gains from trade and economic progress generally, so that the lion's share goes to the lions, while the poor lambs are themselves swallowed up in the process.'[68]

Fourth, as argued above a decline in the terms of trade for primary and agricultural commodities may come from a productivity increase or demand decrease which have different effects. Moreover, a terms of trade decline for such commodities due to a productivity increase may overlap with a relative demand fall (if these commodities are assumed to have inelastic demand) which would aggravate the fall in the terms of trade. If demand is restricted, any increase in productivity may reduce the relative prices by increasing production beyond total demand. This means that efforts to improve the productivity of primary goods export industries are self-defeating.

Fifth, a demand fall for primary commodities may take two forms. The first is a short-run demand shock while the second is a long-run continuous demand decline. Even if there is not a long-run tendency for the terms of trade to fall for a particular primary commodity, the nature of primary commodity prices involves sharp fluctuations that can be very damaging to an economy.[69] As can be seen from table 4.1 and figure 4.4(a), NBTT for manufactured goods exporters fluctuate less than for primary commodity exporters.

Table 4.1: NBTT instability index (1968-93)

Agriculture	Primary	Metal	Manufacture
172	213	315	100

Note: The NBTT are calculated for 26 years for the major producer countries for the above commodities. Thus the above figures do not refer to commodities themselves but major producer countries which are reported in table A4.1. Fluctuation in the NBTT index is calculated by averaging absolute values of changes and then indexed to manufacture.

[68] Streeten (1981: 217).

[69] Even though some recent research confirms this argument [see J. Love (1992), M. Lutz (1994) and D. Dawe (1996)], the causes and impacts of the terms of trade and export instability are controversial issues and the empirical evidence is rather mixed and inconclusive. See Athukorala and Huynh (1987) for a literature survey on the causes and impacts of export instability.

In relation to the long-run general demand fall (relative or absolute) for a particular commodity, Liang (1992), for example, argues that sectors differ in their market characteristics and growth potentials.

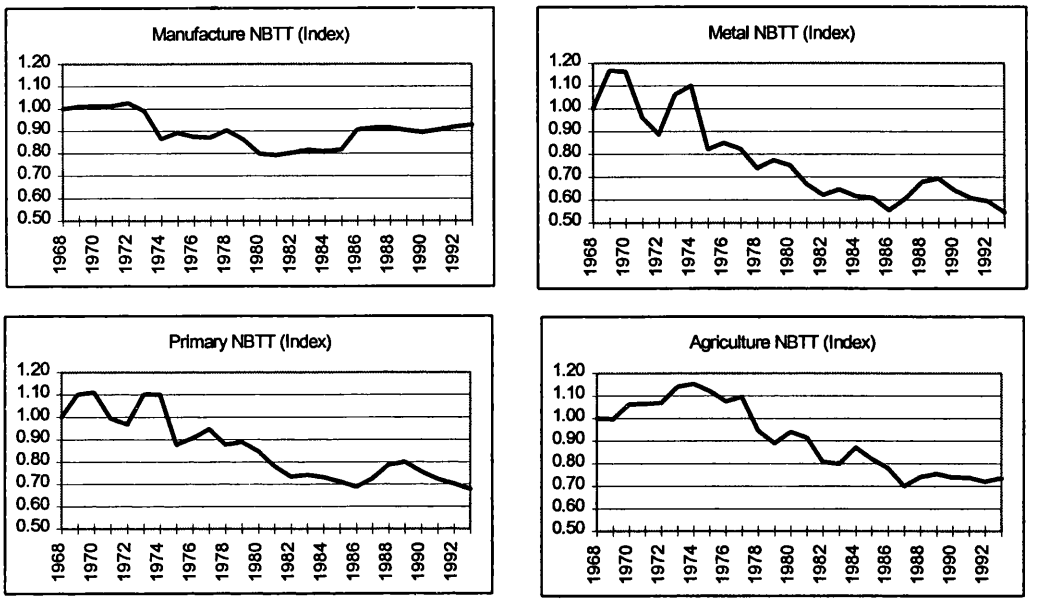
> The low cost sectors may not coincide with the sectors with high growth potentials. [...] For most developing countries, their comparative advantages are typically found in the export of traditional commodities whose demand is often inelastic and sluggish in expanding. Developing countries face comparative disadvantages in their import-competing, manufacturing sectors; these are precisely the industries where income and price elasticity of demand are high, technological progress is rapid, and labour productivity increases fast. Liang (1992: 456)

Relative demand for agricultural products falls as economic development takes place. As agricultural productivity increases, given a constant level of demand, the necessary labour force to produce the same amount of production decreases. This process forces rural labour to migrate towards urban areas, in search for employment. Transformation of a country from rural to urban is inevitable and can be very painful. The faster the productivity increase on the land, the faster is the transformation.[70] This transformation may be relatively easier in a country where there is a dynamic manufacturing sector. However this is not so for countries that are specialised in agriculture and where there is no dynamic manufacturing sector to absorb these surplus workers. When relative demand falls for agricultural commodities in international markets, all agriculture producing countries may first try to capture a larger market share by price competition. But since the market is not big enough for all producers, some will lose out.

Tables 4.2 and 4.3 demonstrate these obvious facts. Table 4.2(a) shows that the share of agriculture in total exports is lower everywhere. Table 4.3(a) shows the share of agriculture and primary commodity producer countries' total exports in total

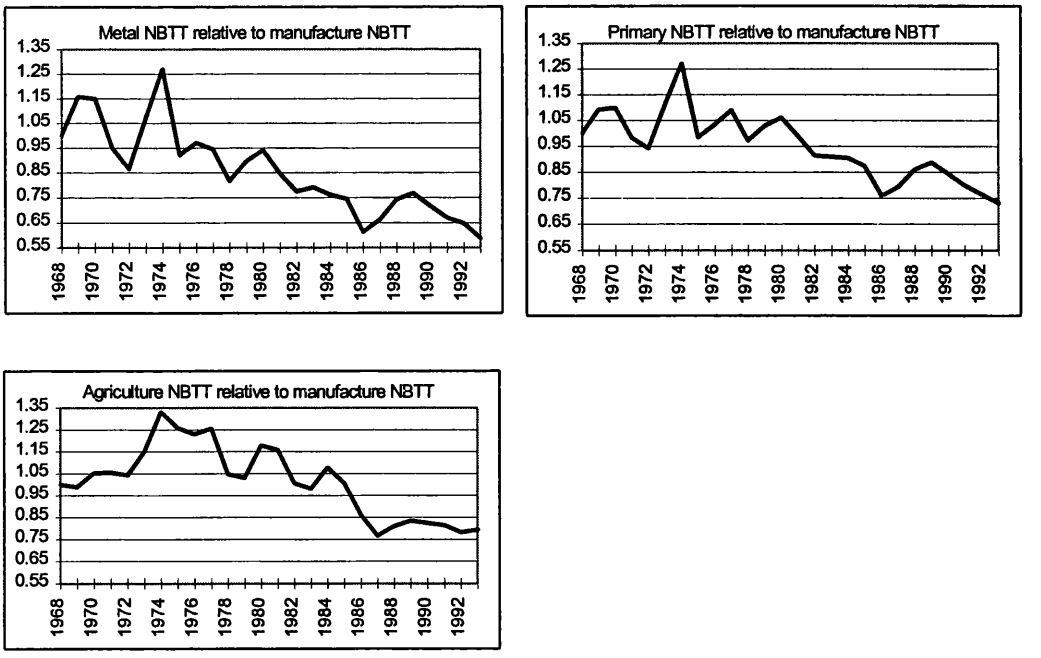
[70] The reason that the European Union has such high subsidies for agriculture is this fast productivity increase. When productivity on land increases very fast, rural workers and farmers are released from land. If the urban sector is unable to accommodate them quickly (given their lack of skills for

Figure 4.4(a): Net barter terms of trade (NBTT) for manufactures, metal, primary commodities and agriculture exporting countries



Source: World Bank Stars Database

Figure 4.4(b): Net barter terms of trade (NBTT) for metal, primary commodities and agriculture exporting countries, relative to manufactures



Source: World Bank Stars Database

employment in the urban sector), there will be considerable misery. The idea is to subsidise agriculture and keep people employed until there is time for this transformation to take place less painfully.

Table 4.2(a): Agriculture exports as a percentage of total exports, by region and income group

	World	Developed countries	Developing countries	Latin America	Sub-Saharan Africa	Asia & Pacific	European Union
1961	26.0	19.6	50.0	47.9	69.4	43.7	15.0
1970	16.5	12.8	32.8	43.7	49.6	23.5	11.7
1980	11.6	11.3	12.3	27.7	19.9	7.7	11.3
1990	9.3	8.8	11.1	26.4	19.8	7.5	10.4
1993	8.9	8.8	9.3	23.9	19.4	6.5	10.9

Source: FAO, SOFA Database (1994)

Table 4.2(b): Agriculture exports as a percentage of total world agricultural exports, by region and income group

	World	Developed countries	Developing countries	Latin America	Sub-Saharan Africa	Asia & Pacific	European Union
1961	100	59.3	40.7	15.0	7.8	15.2	20.8
1970	100	63.0	37.0	14.7	7.5	12.9	27.2
1980	100	68.9	31.1	13.6	4.4	12.4	34.0
1990	100	72.4	27.6	10.8	2.7	13.6	44.4
1993	100	72.2	27.8	9.9	2.2	15.3	44.5

Source: FAO, SOFA Database (1994)

Table 4.2(c): Total exports as a percentage of total world exports, by region and income group

	World	Developed countries	Developing countries	Latin America	Sub-Saharan Africa	Asia & Pacific	European Union
1961	100	78.8	21.2	8.2	2.9	9.0	36.1
1970	100	81.3	18.7	5.6	2.5	9.1	38.3
1980	100	70.8	29.2	5.7	2.5	18.7	34.8
1990	100	76.8	23.2	3.8	1.3	16.9	39.9
1993	100	73.4	26.6	3.7	1.0	21.1	36.4

Source: FAO, SOFA Database (1994)

Table 4.3(a): Share of agriculture and primary commodity exporter countries' total exports in total world exports, (percent)

	Agriculture exporters		Primary commodity exporters	
	Exports (Current prices)	Exports (Constant prices)	Exports (Current prices)	Exports (Constant prices)
1968	1.81	1.39	3.27	2.58
1970	1.71	1.29	3.17	2.33
1975	1.28	0.83	1.87	1.57
1980	1.19	0.83	1.86	1.49
1985	1.03	0.78	1.44	1.32
1990	0.75	0.70	1.15	1.11
1993	0.71	0.65	1.13	1.19

Source: World Bank Stars Database

Table 4.3(b): Trade ratio of agriculture and primary commodity exporters, (percent)

	Agriculture exporters		Primary commodity exporters	
	Exports/GDP (Current prices)	Exports/GDP (Constant prices)	Exports/GDP (Current prices)	Exports/GDP (Constant prices)
1968	8.74	8.47	16.35	16.87
1970	9.17	8.63	17.44	17.17
1975	9.84	6.07	14.74	12.95
1980	12.37	7.33	18.32	15.07
1985	10.14	8.74	16.99	15.20
1990	10.34	9.91	16.31	15.86
1993	6.91	8.88	13.71	17.51

Source: World Bank Stars Database

Table 4.4(a): Trade ratio and the net barter terms of trade (NBTT), by income group

World

	X/GDP current	X/GDP constant	NBTT
1968	9.6	10.4	1.00
1970	10.4	11.5	1.01
1975	14.3	12.1	1.02
1980	17.7	14.0	0.98
1985	15.3	14.5	0.96
1990	16.2	16.5	1.00
1993	15.2	17.7	1.00

World (non-oil)

	X/GDP current	X/GDP constant	NBTT
1968	9.2	9.0	1.13
1970	10.0	9.9	1.13
1975	13.2	11.1	1.02
1980	16.0	13.1	0.92
1985	14.7	14.2	0.92
1990	15.7	16.1	0.99
1993	14.8	17.2	1.01

Oil exporters

	X/GDP current	X/GDP constant	NBTT
1968	23.5	58.5	0.35
1970	22.5	61.5	0.35
1975	35.8	43.5	0.97
1980	42.7	37.3	1.56
1985	25.3	22.2	1.60
1990	32.4	27.3	1.08
1993	27.3	31.3	0.88

Low-income (non-oil)

	X/GDP current	X/GDP constant	NBTT
1968	6.2	11.0	1.32
1970	5.6	9.4	1.41
1975	6.8	9.2	1.18
1980	9.4	9.6	1.13
1985	8.5	9.9	1.06
1990	12.3	11.1	1.00
1993	15.3	12.4	1.01

Middle-income (non-oil)

	X/GDP current	X/GDP constant	NBTT
1968	9.3	11.1	1.24
1970	9.5	11.0	1.30
1975	10.7	9.2	1.34
1980	14.9	12.5	1.16
1985	17.6	16.4	1.06
1990	16.3	19.4	1.01
1993	15.9	23.1	0.99

Lower-middle-income (non-oil)

	X/GDP current	X/GDP constant	NBTT
1968	13.1	17.1	1.18
1970	13.9	16.8	1.22
1975	15.7	11.9	1.48
1980	17.9	14.3	1.25
1985	15.7	14.2	1.07
1990	20.0	19.1	1.02
1993	20.0	24.1	0.98

Upper-middle-income (non-oil)

	X/GDP current	X/GDP constant	NBTT
1968	8.3	9.6	1.26
1970	8.4	9.6	1.33
1975	9.6	8.5	1.30
1980	14.2	12.1	1.14
1985	18.0	16.9	1.06
1990	15.6	19.4	1.00
1993	15.1	22.8	0.99

High-income (non-oil)

	X/GDP current	X/GDP constant	NBTT
1968	9.4	8.7	1.12
1970	10.5	9.8	1.12
1975	14.0	11.3	1.00
1980	16.5	13.3	0.90
1985	14.9	14.2	0.90
1990	15.8	16.1	0.99
1993	14.7	16.9	1.01

Source: World Bank Stars Database

Table 4.4(b): Trade ratio and the net barter terms of trade (NBTT) index (1968 = 100), by income group

World

	X/GDP current	X/GDP constant	NBTT
1968	100.0	100.0	100.0
1970	108.7	109.9	100.7
1975	149.3	116.3	102.3
1980	184.7	134.4	98.3
1985	159.8	139.0	95.7
1990	169.1	157.8	99.5
1993	159.0	169.4	100.1

World (non-oil)

	X/GDP current	X/GDP constant	NBTT
1968	100.0	100.0	100.0
1970	109.3	110.3	100.6
1975	143.8	124.0	90.6
1980	173.9	146.0	82.0
1985	160.5	158.4	82.0
1990	170.7	179.2	88.1
1993	161.6	191.4	89.7

Oil exporters

	X/GDP current	X/GDP constant	NBTT
1968	100.0	100.0	100.0
1970	95.8	105.1	100.7
1975	152.2	74.5	279.2
1980	181.6	63.7	450.7
1985	107.3	38.0	464.0
1990	137.8	46.7	312.1
1993	116.2	53.6	253.1

Low-income (non-oil)

	X/GDP current	X/GDP constant	NBTT
1968	100.0	100.0	100.0
1970	89.9	85.3	106.8
1975	110.4	83.5	89.5
1980	152.7	87.2	85.2
1985	137.1	90.2	79.9
1990	198.8	100.8	75.7
1993	247.5	112.4	76.0

Middle-income (non-oil)

	X/GDP current	X/GDP constant	NBTT
1968	100.0	100.0	100.0
1970	102.2	99.2	104.9
1975	114.8	82.7	108.4
1980	160.1	112.6	93.8
1985	188.5	148.1	85.5
1990	174.5	174.9	81.3
1993	170.6	208.0	80.2

Lower-middle-income (non-oil)

	X/GDP current	X/GDP constant	NBTT
1968	100.0	100.0	100.0
1970	106.5	97.9	103.8
1975	119.6	69.4	125.9
1980	136.8	83.2	105.8
1985	120.0	82.9	91.0
1990	152.6	111.7	86.7
1993	153.1	140.7	83.6

Upper-middle-income (non-oil)

	X/GDP current	X/GDP constant	NBTT
1968	100.0	100.0	100.0
1970	101.7	100.1	105.2
1975	115.3	89.1	102.5
1980	171.5	126.0	90.0
1985	216.9	176.7	83.6
1990	187.5	202.8	79.3
1993	182.0	237.9	78.7

High-income (non-oil)

	X/GDP current	X/GDP constant	NBTT
1968	100.0	100.0	100.0
1970	111.3	112.3	100.1
1975	148.7	129.6	89.8
1980	175.2	153.3	80.3
1985	157.7	163.8	80.9
1990	167.3	184.9	88.6
1993	155.6	194.8	90.7

Source: World Bank Stars Database

world non-oil exports. There is a clear and continuous fall in the current and constant price export share for these countries. Table 4.3(b) shows their trade ratio. The trade ratio in constant prices for these countries was barely higher in 1993 than in 1968.

When these figures are compared with the world trade ratio figures in table 4.4(a), it looks obvious that these countries have been left behind of the overall growth of world trade. Average world real total trade has been continuously increasing faster than total income and thus the world trade ratio was much higher in 1993 than in 1968.

Table 4.4(a) also shows the trade ratio for low-, middle- and high-income countries. As the table illustrates, low-income countries were barely more open in 1993 compared to 1968. The trade ratio in constant prices in 1993 (12.4 percent) was only slightly higher than 1968 (11.0 percent). The middle- and high-income countries are clearly trading more. In particular, upper-middle-income countries increased their openness spectacularly. The difference between the current and constant price trade ratios indicates the relative prices of exportables and domestic goods. This is a result of the real exchange rate devaluations which increase the relative price of exportables to the home goods. The increase in the current price trade ratio is higher for the low-income countries in comparison with the others. Particularly after 1986 when most of these countries adopted structural adjustment policies, they suppressed their domestic markets and adopted 'beggar-my-neighbour' competitive devaluations to increase their exports.

Sixth, as argued earlier, in a dynamic sector like industry where the use of modern technologies and innovations are more important compared to, say a relatively static sector like agriculture, value-added will be higher. Without getting into the arguments about the complex nature and relations of rural and urban areas, it is true to say that, domestic or international, the relative value-added and wealth of rural areas have always been (and probably will always be) lower compared to urban areas.[71] In this sense, a country cannot rely on exports of agricultural or primary commodities and industrialisation is not a choice but a necessity for economic development.

[71] Marx, for example, argued that 'most agricultural people are forced to sell their product below its value [that is, below the high-cost margin of production, especially in the industrial nations] whereas in countries with advanced capitalist production the agricultural product rises to its value.' (Marx, 1972, cited in Hudson, 1992: 158)

Finally the figure 4.4(a) shows that there is a certain pattern of decline in the NBTT for primary commodities at least for the period stated. Until 1974 the NBTT of primary commodities fluctuated around the starting year (the NBTT are indexed to 1968), and after the oil shock they gradually declined. The terms of trade also declined for manufactured good exporters between 1974 and 1986. Since a sharp increase in oil prices reduced the NBTT for all non-oil exporters alike, it is difficult to see if the primary commodity NBTT have a tendency to fall relative to manufactures. However, in figure 4.4(b), where the NBTT of primary commodities are presented relative to manufacture NBTT, the relative fall in the NBTT for primary commodities is clearer.

In table 4.4(a), the NBTT for low-, middle- and high-income countries are also presented. The figures show that the NBTT for oil exporters rose sharply between 1970 and 1985, as a result of the oil shocks of 1973 and 1979, and then declined gradually. During the same period, non-oil producing countries (world-nonoil) faced a sharp fall in the NBTT. After 1985, the NBTT gradually rose with a sharp fall in oil prices. In 1993, however, they were still below the 1970 level. The NBTT for low- and middle-income countries continued falling even after 1985 and picked up a little towards 1993 for low-income countries. At the end of 1993, the fall in the NBTT for low-income countries was more than for middle- and high-income countries (see table 4.4(b)). Only high-income countries have managed to increase their NBTT during the 1980s.

Streeten's (1981) argument on the reasons why measured NBTT overstates the deterioration or understates the improvement does not make sense. First, as Spraos (1980) argued, it is not necessarily true that primary products do not lend themselves to quality improvements, once two types of quality improvements are identified: (i) the product mix is altered in favour of higher quality goods within a group, and (ii) technical progress imparts superior properties to a given good. He argued that quality improvements for primary commodities occur in terms of (i), thus even though 'the NBTT series are [not] free of quality bias, the alleged direction of the bias is a matter which cannot merely be asserted; it needs to be demonstrated.'[72] Second, even if product innovation and quality improvements occur mainly in industrial products, this

[72] Spraos (1980: 118).

does not necessitate a rise in the NBTT for these products in the long-run. Quality improvements could change the relative prices of the same kinds of commodities (such as price of a digital camera against an ordinary camera) in the long-run but not the relative prices of industrial commodities against agricultural commodities. The quality improvements that are usually associated with higher initial costs would not also change this fact for two reasons. Firstly, the initial price increase and decrease of the individual commodities would be eliminated when all commodities are taken together. Secondly, since the initial cost rise would decline gradually, there would be no long-term tendency for the NBTT to fall against agricultural products. Thus, neither quality improvements nor initial high costs of production of industrial commodities are good explanations of any deterioration of the agricultural NBTT. Streeten's argument on remedying the uneven distribution of the benefits of trade due to the movement in the NBTT by more inflation or an appreciation of the real exchange rate does also not make sense since it does not take into account the structural peculiarities of the commodities that developing countries export. As a result of the specific characteristics of the commodities that are exported by developing countries, there is severe competition among them and 'beggar-my-neighbour' competitive devaluations are frequently used to increase competitiveness and capture larger markets.

Whatever the critics of export pessimism claim, there is a great deal of evidence of a wave of new protectionism in the form of non-tariff barriers, particularly during the late 1970s. Nevertheless, as argued earlier, it is certainly true that the volume of exports is increasing much faster than volume of production in almost all countries. However, as table 4.4(a) clearly shows, this is particularly true for the upper-middle-income countries and high-income countries. Most low-income countries are left out of this process. Even though some writers like Panoutsopoulos (1992) argue that 'the actual experience of developing countries during the past forty years has justified the neoclassical approach' since developing countries' exports have grown rapidly, particularly in manufactures,'[73] his own figures refute this argument. He has to admit that '[t]he developing countries' participation in exports of

[73] Panoutsopoulos (1992: 9).

manufactures has been extremely uneven.'[74] According to the table he provides[75] only nine countries account for 76 percent of developing country exports of manufactures in 1987.

Table 4.5 makes the same point. Table 4.5(a) shows the share of different regions in total world trade. The share of industrialised countries increased from 69.2 percent in 1975 to 72.1 percent in 1990 and than declined to 65.2 percent in 1995. The share of developing countries stayed around the same level until 1990 (about 27 percent) and then increased to 33.6 percent in 1995. This sharp increase (6.6 percent) is partially a result of a decrease in the share of industrial countries (4 percent) and a decrease in the share of former-socialist countries (2.6 percent) classified as 'USSR and other non-members n.i.e.'[76]

These figures, however, do not challenge the above arguments since the 'developing countries' category includes the so-called 'High Performing Asian Economies' (HPAE).[77] Indeed, when they are excluded from the 'developing countries' category, the share for the rest of the developing countries falls from 22.1 percent in 1975 to 16.5 percent in 1995.

The reasons for their failure to participate in this process is very complex in nature. Tables 4.2 and 4.6 suggest that, this failure, at least partially, might be due to protectionism in developed countries. Agriculture, according to orthodox trade theory, is where developing countries are supposed to have comparative advantage as it is labour-intensive and developing countries are labour-abundant. If the theory holds and there is no protectionism, developed countries are expected to import agricultural commodities from developing countries. However, tables 4.2 and 4.6 indicate just the opposite. Table 4.2(b) shows that developed countries' agricultural exports as a percentage of total world agricultural exports increased from 59.3 percent in 1961 to 72.2 percent in 1993, whereas the same ratio for developing countries fell from 40.7 percent to 27.8 percent. In particular, the European Union has increased its share considerably from 20.8 percent to 44.5 percent. The fall in the same ratio for Latin America and particularly for Sub-Saharan Africa is dramatic. Table 4.6 shows net

[74] *Ibid.*, p. 31.
[75] Table 2.9, p. 32.
[76] For details of the classification of countries see IMF Direction of Trade Statistics.

Table 4.5(a): Share of world exports (percent), by region and income group

	Developed countries[78]	Developing countries	USSR [79]	Sub-Saharan Africa	Asia	Latin America	HPAEs [80]	Asia (without HPAE)[81]	LDCs (without HPAEs)
1975	69.2	27.0	3.8	2.8	5.9	5.6	4.9	1.0	22.1
1980	68.3	28.6	3.1	2.7	7.8	6.4	7.6	1.1	21.0
1985	70.7	27.0	2.3	2.9	11.2	4.5	10.2	1.1	16.8
1990	72.1	26.6	1.3	2.2	12.8	3.9	11.3	1.5	15.3
1995	65.2	33.6	1.2	1.9	18.9	5.0	17.1	1.8	16.5

Source: IMF, Direction of Trade Statistics

Table 4.5(b): Share of exports from developed countries (percent), by region and income group

	Developed countries	Developing countries	Sub-Saharan Africa	Asia	Latin America
1975	67.5	26.3	3.1	5.1	4.8
1980	67.5	27.3	3.0	6.4	5.3
1985	72.7	24.1	3.1	9.2	4.5
1990	76.3	23.0	2.3	9.9	12.4
1995	70.2	29.2	2.0	14.8	8.4

Source: IMF, Direction of Trade Statistics

Table 4.5(c): Share of exports from developing countries (percent), by region and income group

	Developed countries	Developing countries	Sub-Saharan Africa	Asia	Latin America
1975	61.3	27.0	2.6	8.3	5.4
1980	56.9	30.1	2.7	11.2	5.8
1985	61.0	29.9	2.3	15.2	4.5
1990	61.0	35.8	2.0	20.2	3.9
1995	55.0	42.5	1.8	27.4	4.5

Source: IMF, Direction of Trade Statistics

Table 4.5(d): Share of exports from Sub-Saharan Africa (percent), by region and income group

	Developed countries	Developing countries	Sub-Saharan Africa	Asia	Latin America
1975	66.6	16.8	6.7	2.7	1.7
1980	57.5	16.9	6.0	2.8	5.9
1985	71.6	14.6	5.1	3.2	4.6
1990	69.3	16.6	7.3	4.2	1.3
1995	64.6	25.0	9.9	9.0	2.1

Source: IMF, Direction of Trade Statistics

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[77] These countries are China; "Asian Tigers", Hong Kong, Korea, Singapore, Taiwan; Newly industrialising countries (NICs) Indonesia, Thailand, Malaysia, Philippines.

[78] 'Industrial Countries' in IMF Direction of Trade Statistics.

[79] USSR & other nonmembers n.i.e. For details of classification of countries see IMF Direction of Trade Statistics.

[80] High Performing Asian Economies: Japan, Hong Kong, South Korea, Singapore, Taiwan, Indonesia, Malaysia, Thailand.

Table 4.6(a): Net agriculture exports: (X/M)*100[82], by region and income group

	Developed countries	Developing countries	Latin America	Sub-Saharan Africa	Asia & Pacific	European Union
1961	69	190	347	337	120	42
1970	71	180	332	313	106	55
1980	87	106	220	143	73	76
1990	89	104	240	132	78	92
1993	94	96	171	103	82	101

Source: FAO, SOFA Database (1994)

Table 4.6(b): Net agriculture exports: (X/M)*100 (Index: 1960 = 100), by region and income group

	Developed countries	Developing countries	Latin America	Sub-Saharan Africa	Asia & Pacific	European Union
1961	100	100	100	100	100	100
1970	104	95	96	93	88	132
1980	126	56	63	43	61	182
1990	129	55	69	39	65	220
1993	137	51	49	30	69	241

Source: FAO, SOFA Database (1994)

agricultural exports for the same income groups and regions. In 1993, the European Union became a net exporter of agricultural products and Sub-Saharan Africa in 1992 became a net importer. The Asia and Pacific region became a net importer during the mid-1960s. Latin America, even though there is a sharp fall, is still a net exporter. This data convincingly shows that at least one of the above arguments must be true (or perhaps both). Either comparative advantage theory is wrong or developed countries are protectionist.

Finally, table 4.5(b) provides evidence to suggest that developed countries increased trade more among themselves than with developing countries. The share of total exports among developed countries increased from 67.5 percent in 1975 to 76.3 percent in 1990. It fell back to 70.2 percent in 1995 but this was completely due to increased trade with Asian countries. Table 4.5(c) shows that the share of exports from developing countries to industrial countries declined from 61.3 percent in 1975 to 55 percent in 1995.

[81] Excludes Japan.

Streeten's argument on the protection of the agricultural sector in developed countries which supposedly helps developing countries to industrialise by blocking their agricultural exports is difficult to grasp. As Prebisch himself argued 'the growth of domestic industry is not incompatible with a sustainable expansion of primary production and exportation. Hence, the standard of living could be raised through the process of industrialisation without any decline in the volume or efficiency of primary production.'[83] Successful implementation of an import-substitution strategy requires the protection of the industrial sector by de-protecting some others (namely transferring the surplus from one sector to another), possibly traditional exports. Traditional exports also bring the vital foreign currency needed for the importation of capital goods. Protectionism by developed countries not only reduces the actual volume of traditional exports and thus the foreign currency available for the importation of the capital goods, but also by reducing the available transferable surplus, it reduces the possibility of developing industry. Import-substitution policies in developing countries requires a relative, not absolute, decline in the production of traditional exports by increasing non-traditional exports. Thus, the industrial sector in developing countries would certainly benefit from an increase in the NBTT for primary commodities.

It is true that the commodity composition of exports by developing countries has undergone a major change in the direction of increased share of manufactures. Table 4.7 shows that most countries indeed increased the share of manufactures in their total exports. This, however, does not completely invalidate the Prebish-Singer hypothesis for the following reasons.

First, even though there is an undeniable tendency for developing countries to increase their industrial exports, primary commodities still account for the bulk of exports by many developing countries. In 1990, the share of manufactures in total exports for 64.5 percent of countries was still less than 50 percent. This means that if the Prebish-Singer hypothesis is right many developing countries may still suffer (though less than before) from declining NBTT. Second, most manufactured commodities exported from developing countries consist of processed primary

[82] A figure lower than 100 means imports are greater than exports.
[83] in Marco (1972: 6).

commodities. They are relatively unsophisticated manufactured commodities which may still carry most of the characteristics of primary commodities.

Table 4.7: Share of manufacture exports in total exports

Number of countries

Share of manufacture exports in total exports	1970	1990
0 to 9 %	72	24
10 to 19 %	17	28
20 to 29 %	10	23
30 to 39 %	7	15
40 to 49 %	4	1
50 to 59 %	7	8
60 to 69 %	6	13
70 to 79 %	7	11
80 to 89 %	5	9
90 to 100 %	6	9
Total	141	141

4.7a

Percentage of the total

Share of manufacture exports in total exports	1970	1990
0 to 9 %	51.1	17.0
10 to 19 %	12.1	19.9
20 to 29 %	7.1	16.3
30 to 39 %	5.0	10.6
40 to 49 %	2.8	0.7
50 to 59 %	5.0	5.7
60 to 69 %	4.3	9.2
70 to 79 %	5.0	7.8
80 to 89 %	3.5	6.4
90 to 100 %	4.3	6.4
Total	100	100

4.7b

Cumulative percentage

Share of manufacture exports in total exports	1970	1990
0 to 9 %	51.1	17.0
10 to 19 %	63.1	36.9
20 to 29 %	70.2	53.2
30 to 39 %	75.2	63.8
40 to 49 %	78.0	64.5
50 to 59 %	83.0	70.2
60 to 69 %	87.2	79.4
70 to 79 %	92.2	87.2
80 to 89 %	95.7	93.6
90 to 100 %	100	100

4.7c

Source: World Bank Stars Database

Third, the last two of the four underlying economic arguments of the Prebish-Singer hypothesis for explaining the tendency of the NBTT to decline are related to the characteristics of countries rather than the characteristics of commodities. Thus, the industrialisation process, as a move from the exportation of primary commodities to that of manufactured commodities, may eliminate the first two arguments but not the last two. Indeed, Sarkar and Singer (1991) showed that not only for primary and agricultural products but even for manufactured products, there is a tendency for the NBTT to weaken for developing countries.[84] Lucke (1993) confirms this finding.

Finally, neither a rapid industrialisation process nor an increased share of industrial products in total exports supports the critics of export pessimism, unless they demonstrate that this process is the result of liberalisation. Export pessimists did not argue against exports but they argued for the necessity of industrialisation and the improbability of achieving this by relying on primary commodity exports. The

[84] These arguments, however, are criticised by Bleaney (1993) who has argued that Sarkar and Singer's findings primarily reflect changes in the real exchange rates of developing countries. Athukorala (1993) also criticised them for not paying adequate attention to appropriately adjusting the data and for misinterpreting the results.

relative industrialisation in developing countries might have resulted from import-substitution policies which would prove export pessimists' points. The recent extensive literature has proven the critics to be wrong in arguing that the successful Asian countries increased their trade as a result of trade liberalisation. In reality their success, as export pessimists suggest, was a result of initial successful import-substitution and export-promotion policies.

The demand for primary commodities, like other commodities, are responsive to prices. However, once the low price and the income elasticities of the demand for these commodities are accepted, the necessary fall in price to increase total real exports might be too high. What is gained by exporting more might be lost because of low prices.

Even though there is a certain amount of scepticism about Lewis's (1980) argument for South-South trade,[85] developing countries increased trade among themselves from 27 percent in 1975 to 42.5 percent in 1995. This might be interpreted as an encouraging sign.

The above discussion, though not conclusive, suggests that export pessimism at least for primary commodity exports is credible and challenges the view that '[c]ountries that have stimulated exports of primary products have benefited from increases in long-term real earnings.'[86] Even though the theoretical arguments of export pessimism were not always accurate and convincing, the proponents were right in pointing out the necessity of protectionism and industrial policy for promoting industrialisation. They successfully challenged the view that free markets and specialisation would benefit all participants equally and they called for a reorganisation of international markets and for 'positive discrimination' in favour of developing countries.

Some export pessimists argue 'that the 'unequal exchange' arising out of the prevailing international trade structure is solely to blame'[87] for the problems of developing countries. Others focus primarily on the issue of distributive justice or fairness and do not deny the existence of static gains from trade. They also do not

[85] This is because, it is argued, developing countries need developed countries' markets to sell their manufactured commodities and developing countries themselves can create only limited opportunities for trade.
[86] Panoutsopoulos (1992).

claim that deteriorating NBTT is direct evidence of a welfare loss for developing countries.[88] They do not 'question the basic doctrine of comparative advantage theory which states that trade is a positive-sum game resulting in gains to the trading partners.'[89] Thus, they suggest a temporary delinking until a better basis for trade with more evenly distributed gains can be developed.

4.5. CONCLUSION

This chapter complements the arguments produced in the first two chapters. The first two chapters criticised the classical and neoclassical versions of comparative advantage theory. This chapter evaluates the arguments regarding dynamic versions of the theory. It argues that attempts to make static comparative advantage theory dynamic are bound to be unsuccessful because they are based on static parameters such as the production function and factor endowments. In a dynamic world where competitiveness is created by the decisions of policymakers, comparative advantage theory loses its meaning. Dynamic comparative advantage is supposed to guide policymakers in their decisions to implement industrial policies given the available information on the future relative cost structure. The future relative cost structure, however, is impossible to foresee and it is by and large a consequence of policymakers' decisions. The only 'comparative advantage' is the accurateness and the ability of policymakers to implement successful industrial policies. Thus, dynamic comparative advantage theory as a policy guide for the policymaker is redundant.

The second part of this chapter has argued that the separation of import-substitution and export-promotion as alternative trade policies is erroneous. The idea that import-substitution and export-promotion are alternative and contradictory policies only makes sense if one accepts the unrealistic assumptions of the neoclassical model. In a world where there is less than full employment and where dynamic scale economies exist, the relationship between import-substitution and export-promotion can be complementary. Import-substitution can be seen as a

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[87] Wickramasinghe (1994: 17).
[88] Singer (1984: 284).
[89] *Ibid.*, p. 287.

precondition for export-promotion with a sequential relationship between them. Alternatively, both import-substitution and export-promotion policies can be implemented simultaneously. As interventionist trade policies, they are both incompatible with free market trade policy. They both distort prices, and change the cost structure. They aim at changing specialisation based on comparative advantages. They protect and promote specific selected industries to develop competitiveness with the hope of bringing about long-term benefits.

Finally, this chapter summarised and critically evaluated the debate surrounding 'export pessimism'. The export pessimists argue that the benefits of trade are usually acquired by developed countries as a result of the characteristics of the commodities they trade. Export pessimism is an important justification for import-substitution and industrial policies. Developing countries usually produce and export primary and agricultural commodities and import advanced industrial commodities as a result of comparative advantage. Specialisation in such commodities has certain disadvantages and protectionist/promotionist policies are introduced to change specialisation based on comparative advantage. Export pessimists argue that primary commodities have low price elasticity of demand and supply, and the demand for such commodities expands less than for manufactured commodities. This means that the producers of such commodities will find it increasingly difficult to export and earn sufficient foreign currency to import necessary imports. The ever-increasing competition among primary commodity producers with diminishing demand will drive down prices and worsen the terms of trade. The only alternative is industrialisation within the domestic market to break the cycle of poverty caused by specialisation in the primary commodities. Increasing protectionism in developed countries and the fallacies of composition mean that developing countries can only rely on their domestic markets for industrial products. Even though the sceptics criticise export pessimism arguments theoretically and empirically, their attempts to weaken the argument are unsuccessful. In this chapter it was argued that there is indeed a tendency for the terms of trade to decline and that specialisation based on primary commodities cannot be sustained in the long-run. As the proponents of export pessimism argue, a structural transformation behind protective barriers and a change in comparative advantage is necessary for developing countries.

The three chapters in the theoretical section have challenged the notion of trade based on free market ideas. It has been argued that there are important theoretical problems surrounding these free market ideas. The different versions of comparative advantage theory which are used to justify the free trade ideology are highly problematical, and specialisation based on comparative advantage may severely damage the development attempts of developing countries. The only policy option open to developing countries, it is argued, is the sound industrial policy. The aim of the next two chapters is to empirically investigate the export-led development hypothesis. Chapter five will evaluate the empirical literature while chapter six will develop an alternative framework to evaluate the accuracy of export-led development theory.

APPENDIX

Table A4.1: Country groups used in empirical investigations

Low-income countries

Bangladesh, Benin, Burkina Faso, Burundi, Central African Republic, Chad, China, Cote d'Ivoire, Egypt, The Gambia, Ghana, Guinea-Bissau, Guyana, Haiti, Honduras, India, Kenya, Madagascar, Malawi, Mali, Mauritania, Myanmar, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Rwanda, Sao Tome and Principe, Sierra Leone, Somalia, Sri Lanka, Sudan, Tanzania, Togo, Zaire, Zambia, Zimbabwe

Note: Low-income countries are those in which 1993 per capita GNP was $695 or less. (WB, Starts database categorisation)

Middle-income countries

Algeria, Argentina, Barbados, Bolivia, Botswana, Brazil, Cameroon, Cape Verde, Chile, Colombia, Congo, Costa Rica, Dominican Republic, Ecuador, El Salvador, Fiji, Gabon, Greece, Guatemala, Indonesia, Jamaica, Republic of Korea, Libya, Malaysia, Malta, Mauritius, Mexico, Morocco, Oman, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Saudi Arabia, Senegal, Seychelles, South Africa, Suriname, Syrian Arab Republic, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uruguay, Venezuela

Note: Middle-income countries are those in which 1993 per capita GNP was between $696 and $8,625. (WB, Starts database categorisation)

Lower-middle income countries

Bolivia, Cameroon, Cape Verde, Colombia, Dominican Republic, El Salvador, Guatemala, Jamaica, Morocco, Papua New Guinea, Paraguay, Peru, Philippines, Senegal, Suriname, Thailand, Tunisia

Higher-middle income countries

Argentina, Barbados, Botswana, Brazil, Chile, Costa Rica, Fiji, Greece, Republic of Korea, Malaysia, Malta, Mauritius, Mexico, Panama, South Africa, Turkey, Uruguay

High income countries

Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, Kuwait, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom, United States

Note: High-income countries are those in which 1993 per capita GNP was above $8,625. (WB, Starts database categorisation)

Sub-Saharan Africa

Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Cote d'Ivoire, Gabon, The Gambia, Ghana, Kenya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Tanzania, Togo, Zaire, Zambia, Zimbabwe

Latin America

Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay, Venezuela

East Asia

Bangladesh, China, Hong Kong, India, Indonesia, Japan, Republic of Korea, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand

OECD

Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States

Agriculture exporters

Argentina, Burkina Faso, Burundi, Chad, Costa Rica, Dominican Republic, Guatemala, Guinea-Bissau, Honduras, Kenya, Madagascar, Malawi, Mali, Nicaragua, Panama, Paraguay, Rwanda, Somalia, Sudan, Tanzania, Togo

Note: Agriculture exporters are those in which the share of agricultural exports is higher than 50 percent of total exports

Primary commodity exporters

Benin, Bolivia, Burundi, Cape Verde, Chad, Chile, Ghana, Guyana, Honduras, Iceland, Madagascar, Malawi, Mali, Mauritania, Myanmar, New Zealand, Nicaragua, Niger, Panama, Papua New Guinea, Paraguay, Peru, Rwanda, Somalia, Sudan, Tanzania, Togo, Zaire, Zambia

Note: Primary commodity exporters are those in which the share of primary commodity exports is higher than 70 percent of total exports

Metal exporters

Bolivia, Chile, Mauritania, Niger, Papua New Guinea, Peru, Sierra Leone, Togo, Zaire, Zambia

Note: Metal exporters are those in which the share of primary commodity exports is higher than 40 percent of total exports

Manufacture exporters

Austria, Bangladesh, Belgium, China, Finland, Germany, Haiti, Hong Kong, Israel, Italy, Japan, Korea, Republic of, Malta, Nepal, Portugal, Sweden, Switzerland, United Kingdom, United States

Note: Manufacture exporters are those in which the share of primary commodity exports is higher than 80 percent of total exports

Oil exporters

Algeria, Congo, Ecuador, Gabon, Indonesia, Kuwait, Libya, Nigeria, Norway, Oman, Saudi Arabia, Seychelles, Syrian Arab Republic, Trinidad and Tobago, Venezuela

CHAPTER FIVE

EMPIRICAL STUDIES OF OPENNESS AND ECONOMIC GROWTH

5.1. INTRODUCTION

There is continuous interest and debate, but no consensus, regarding the impact of trade policies on economic development. The prevalent view is that export-promotion policies produce better results for developing countries and therefore they are superior to import-substitution policies. Even though some recent literature[1] has contested these ideas, the vast majority of work[2] attempts to produce theoretical and empirical justification for an export-led development strategy. It is argued that outward-orientation promotes economic growth by

> (a) increasing specialisation and expending the efficiency-raising benefits of comparative advantage, (b) offering greater economies of scale due to an enlargement of the effective market size, (c) affording greater capacity utilisation, and (d) inducing more rapid technological change.' (Ram, 1987: 51)

International organisations, such as the World Bank and International Monetary Fund, have been consistent advocates of these ideas. They have continually required developing countries to adopt liberal policies by attaching such conditions to loans. Many World Bank publications have argued for trade liberalisation and produced empirical evidence in support of these ideas.[3] 'Getting the basics right' has been the prime slogan of the World Bank. Among the 'basics', the elimination of price

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[1] Dodaro (1991, 1993), Evans and Alizadeh (1984), Helleiner (1986), Jung and Marshall (1985), Levine and Renelt (1992), Pack (1992, 1988), Schmitz (1984), Sheehey (1990), Timmer (1988), Westphall (1978), Yaghmaian (1994).

[2] Balassa (1978, 1985), Dollar (1991), Fajana (1979), Feder (1983, 1985), Heller and Porter (1978), Kavoussi (1984), Krueger (1980, 1978), Matin (1992), Michaely (1977, 1978), Moschos (1989), Ram (1985, 1987), Salvatore and Hatcher (1991), Tyler (1981), Voivodas (1973), and Williamson (1978).

distortions, particularly those that were caused by protectionism, has been the World Bank's main concern. The World Bank's 1987 *World Development Report* concluded that 'rapid growth and efficient industrialisation [are] usually associated with outward-oriented policies on trade.'[4]

By dividing 41 developing countries into four categories in terms of their trade orientation, the report sought to produce empirical evidence for the export-led development strategy.[5] According to the report, 'outward-orientation' and 'export-promotion' have the same meanings as do 'inward-orientation' and 'import-substitution'. The report argued that those countries classified as 'strongly outward-oriented' performed better than the others, particularly from those that were classified as 'strongly inward-oriented'. Critics of the report objected to the way in which the countries were classified. Particularly, the inclusion of Korea in the 'strongly outward-oriented' category was regarded as highly controversial since Korea's trade policy has never been 'liberal'.

Classification of countries is inevitably subjective, and there is no uncontroversial way to measure trade orientation. As mentioned earlier, this is partly because of definitional problems – that is, the confusion of trade liberalisation with export-promotion. But the real difficulty lies in measuring trade orientation. To measure trade orientation across countries and through time is immensely difficult. In many studies, a trade orientation index is used but is based on the author's subjective judgements. That is why it is incomparable across countries and cannot be used for econometric investigation. Therefore, the first task is to find a relatively unproblematic way to measure trade orientation or 'openness'.

The aim of this chapter is to evaluate the existing empirical work regarding the impact of exports on economic growth, and by doing so, prepare the ground for an alternative framework in the next chapter. As will be argued in detail, the empirical literature suffers from a number of technical and theoretical weaknesses. Most of the empirical work in the literature is irrelevant to the arguments about the relationship

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[3] *World Development Report*, 1983, 1987, 1991; Reports on Africa (1994) and Asia (1993).
[4] *Ibid.*, (1987: 92).
[5] These categories are: strongly outward-oriented countries, moderately outward-oriented countries, moderately inward-oriented countries and strongly inward-oriented countries.

between openness and economic growth and therefore do not provide any persuasive evidence to support or reject the export-led development hypothesis.

5.2. MEASURING OPENNESS

A survey of the literature proves that there is no easy and unambiguous way to measure openness. There are a number of methods to measure openness which can roughly be classified as either 'incidence' or 'outcome' based measures.

> Each of these [measures] have their strengths and weaknesses. [...] Incidence-based measures attempt to measure the trade policies by direct observation of the policy instruments. [...] Outcome-based measures of trade policy assess the deviation of the actual outcome from what the outcome would have been without the trade barriers. (Pritchett 1996: 308)

While tariffs and non-tariff barriers are the most common incidence-based measures, outcome-based measures are usually based on a comparison of international price levels and trade flows. Earlier studies used actual trade figures, either export growth rates or the share of exports in total GDP, as a measure of trade orientation. These studies will be summarised below. First the more complex measures of trade orientation will be considered.

Two important points should be made clear from the outset. First, even though many studies that utilised different measures of openness demonstrate a positive correlation with economic growth rates, these measures themselves are uncorrelated.[6] Second, different measures attempt to determine either trade intensity or trade liberalisation. They are not the same thing even though many researchers still assume them to be. For example, price-based measures are concerned with trade liberalisation while actual trade flows measures are concerned with trade intensity. Since they measure different things, it is not surprising that they are uncorrelated. If these different measures were all 'accurate' indicators of trade liberalisation and trade intensity, the lack of correlation between them would suggest that outward-orientation

[6] See Pritchett (1996) for further details.

is not synonymous with trade liberalisation. If they were all 'accurate' measures, one would expect them to be correlated at least within these two broad categories, i.e. the measures that intended to measure trade liberalisation would be correlated. Given that different measures of trade liberalisation are uncorrelated, only one of them (and probably none) could be considered 'accurate'.

Pritchett (1996) identifies 'six trade policy stance measures': structurally adjusted trade intensity (SATI); Leamer's Openness Index; average tariffs; non-tariff barriers frequency; price distortion; and Leamer's trade distortion indices. Assuming that protectionist policies reduce the actual proportion of traded goods in total production, the SATI index is based on trade intensity adjusted by the structural characteristics of an economy such as size of the market, transport costs, resource endowments, etc. Leamer's (1988) openness and trade distortion indexes are based on the Heckscher-Ohlin-Vanek model. Given a country's endowments,[7] Leamer calculated the sum of the deviations of the predicted from the actual level of trade across each of 182 three-digit SITC commodity classes. Dollar's price distortion index is based on the hypothesis that trade barriers cause higher prices. After adjusting the average price levels with the countries' factor endowments, Dollar (1991) used the differences between the actual and expected price levels as a measure of trade liberalisation.

In addition to these six measures of openness, different studies adopted a number of other measures or a combination to determine openness. The first attempts to measure trade orientation were Krueger's (1978) and Bhawati's (1978) effective exchange rate ratio between exports and imports. The effective exchange rates for exports and imports were calculated by correcting the nominal exchange rates for exports and imports by policy instruments such as export subsidies, export encouragement schemes, import tariffs, import surcharges and import licenses. Following Krueger's and Bhagwati's work on exchange rates, real exchange rate devaluations have also been considered as an important indicator of trade liberalisation since in the presence of quantity restrictions, a real 'devaluation will reduce the rents accrued to those with imports license allocations.'[8] The black market

[7] Such as capital, land, labour, oil, coal and minerals.
[8] Edwards (1993: 1367). See also Bhagwati (1988).

premium and the coefficient of variation of the black market premium have also been used frequently as measures of trade policy.

Michaely *et al.* (1991) created an index of liberalisation for 19 developing countries. Recognising the difficulties of creating an objective index of trade liberalisation, directors of the World Bank financed a comparative study asking the authors of the individual country reports to construct an index of trade liberalisation from zero to twenty. Using qualitative and quantitative indicators of trade liberalisation whenever possible, the indexes mainly reflected the authors' subjective judgements. Because of this subjectivity, the index was 'inherently not comparable across countries.'[9]

The *World Development Report* (1987) classified 41 countries into four groups by combining the following quantitative and qualitative indicators: 1. effective rate of protection; 2. direct controls such as quotas and import licensing schemes; 3. export incentives; 4. degree of exchange rate overvaluation.[10]

Sachs and Warner (1996) used five criteria to determine the classification of trade policies: 1. Non-tariff barriers covering 40 percent or more of trade; 2. average tariff rates of 40 percent or more; 3. a black market exchange rate that is depreciated by 20 percent or more relative to the official exchange rate, on average, during the 1970s or 1980s; 4. a socialist economic system; and 5. a state monopoly on major exports. A country is qualified as liberal if it does not have any of these characteristics. Matin (1992) used four measures of openness to test the export-led hypothesis in Sub-Saharan Africa: 1. the black market premium; 2. Dollar Index of outward-orientation (price distortion index); 3. Halevi-Thomas index of trade liberalisation; and 4. actual trade share.

Balassa (1985) and Heitger (1987) adjusted the trade ratio with the economic structure of the countries, such as market size. Heitger also used effective rates of protection in manufacturing for 37 countries. All these measures have important deficiencies. Some are difficult to calculate, some are subjective measures reflecting the authors' judgements on trade regimes and others are more objective but suffer

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[9] Michaely *et al*, (1991: 28), Volume 7.

[10] Using this classification Alam (1991) empirically tested the correlation between trade orientation and economic growth, saving rates, investment rates and export growth and found a strong positive correlation between them.

from theoretical weaknesses. In this chapter only Dollar's price distortion index will be investigated in depth. This is because the weaknesses of the other indexes are well documented in the literature and also because a critique of the Dollar index will also be an indirect critique of Leamer's indices, as both indices are based on the assumptions of the Heckscher - Ohlin theory of comparative advantage.

Leamer's openness and trade distortion indices are based on the Heckscher-Ohlin-Vanek model and Dollar's price distortion index is based on the Heckscher-Ohlin-Samuelson model. Consequently, they display similar deficiencies. Though these indices have an overall superiority over many others,[11] nevertheless, the validity of them is limited by the validity of the theoretical framework upon which they are built. Once the underlying theoretical framework is rejected, it is hard to agree with the results. Price distortion indices are also problematic since 'they may capture distortions from both import barriers and domestic market imperfections.'[12]

Calculating average tariff rates may seem a straightforward way to measure trade policy, but tariffs are not the only, nor even the most important, barriers to trade. The importance of non-tariff barriers[13] makes tariffs an unreliable measure of trade policy. One way to solve this problem would be to calculate tariffs and non-tariff barriers separately and combine them in a joint index. Unfortunately, this is extremely difficult, because many non-tariff barriers cannot be measured. Furthermore,

> even if tariffs were the only trade intervention used, one could measure at best weighted averages of varying tariff rates across commodities. These would provide a poor idea of the marginal protective effect of the tariff structure. Also because of differing elasticity of demand and supply across goods, aggregate duty rates or total tariff revenue as a percent of imports are a poor measure of the degree of restrictiveness. (Matin 1992: 9)

Another important measure of trade policy is the effective rate of protection whereby the total value-added is calculated using both domestic and international prices and

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[11] Because they are constructed as a result of considerable intellectual input and complex analytical and theoretical work.

[12] Matin (1992: 9).

the difference between them is then interpreted as a measure of protection. Theoretically, the effective rate of protection is one of the most satisfactory measures of trade liberalisation. However, it is extremely time consuming to calculate and the number of studies based on this approach is very limited. There are several country studies[14] which cover one or two years. This limited coverage makes it impossible to consider the evolution of trade policies through time. Moreover, since different country studies cover different time periods they are also not comparable. The reliability of these studies is also doubtful because different studies, covering the same countries over the same years, 'generated important differences in effective rate of protection calculation.'[15]

Structurally adjusted trade intensity (SATI) is a more sensible way to measure trade intensity. Given the structural conditions of countries, one can measure whether a country is trading more or less than is expected. Evidently, SATI does not measure trade liberalisation. As Pritchett (1996: 313) argues, '[a] major weakness of structure-adjusted trade intensity is that the regression adjustment is *ad hoc* and atheoretic.' In the next chapter a measure of openness and a measure of trade liberalisation will be developed. The next section, however, will summarise the earlier literature regarding the relation between economic growth and export growth.

5.3. PRODUCTION FUNCTION

Rather than seeking a measure of openness, earlier empirical work usually regressed export growth rates on economic growth rates, to determine whether they were correlated, and any correlation was interpreted as evidence of the benefits of promoting exports. Before the production function type of tests were introduced, 'Bivariate Spearman Rank Correlation' was the main method. This method was criticised on the grounds that exports were a component of GDP, (therefore, autocorrelation between them would be expected) and it excluded other important

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[13] 'They include restrictive licensing, quotas, outright prohibitions, controls on foreign exchange transactions, advance import deposits, customs valuation pricing and more.' (Matin, 1992: 9).
[14] See for example Alavi (1996) on Malaysia.
[15] Edwards (1993: 1363).

determinants of economic growth.[16] Michaely (1977) argued that '[s]ince exports are themselves part of the national product, an autocorrelation is present; and a positive correlation of the two variables is almost inevitable, whatever their true relationship to each other.'[17] He suggested that a change in the trade ratio should be used instead of the change in exports.

This criticism was dismissed and the proponents of export-promotion defended the method by employing Balassa's (1978) argument that 'import-replacing domestic production, too, is part of the national product, so that in an intercountry framework export growth rates reflect alternative uses of resources.'[18] In other words, exports and import-substituting production compete for limited resources, and a positive correlation demonstrates a positive efficiency gain by redirecting resources from the inefficient import-substituting sectors to the export sectors. Insisting on employing the bivariate model, Kavoussi (1984) made the same point by arguing that,

> In a country where resources have not been growing rapidly and technical progress has been slow, RY [GNP growth rate] cannot be very high regardless of the level of RX [export growth rate]. In such a situation, a high RX will simply cause a very low RF [non-export growth rate]. That is, a high rate of growth of exports can be accomplished only through a slowdown of import competing sectors. A positive correlation between growth rates of exports and GNP will occur, if and only if export expansion is accompanied with a rapid growth of resources and/or major gains in factor productivity. Although there are ample a priori reasons why a high rate of export growth may stimulate capital accumulation and technical progress, contrary to Michaely's assertion, the correlation between export growth and economic performance is by no means automatic simply because exports are themselves part of the GNP. (Kavoussi, 1984: 243, footnote 9)

[16] Michalopoulos and Jay (1973).
[17] Michaely (1977: 50).
[18] Balassa (1978: 182, nootnote 3).

As a response to the second criticism, exports were introduced into the production function.[19] Following particularly the work of Balassa (1978) and Feder (1983), the production function models, where exports are included in the production function with capital and labour, became popular. Inclusion of exports in a Cobb-Douglas production function was meant to prove that the marginal productivities of labour and capital were higher in the export sector. Initially, the regressions took the following form: [20]

$$RY = a + bRK + cRL + dRX$$

where

RY : growth rate of GNP
RK : growth rate of capital stock
RL : growth rate of labour
RX : growth rate of exports

This model, however, was criticised heavily, and the proponents of the theory were forced to provide a justification for the inclusion of exports. Feder (1983) provided this justification by dividing the economy into export (X) and non-export (N) sectors and, assuming that marginal productivity was higher in the export sector, he introduced exports as an additional factor into the production of the non-export sector. A significant coefficient indicated that exports had positive externalities for the non-export sector.

The production functions for the sectors are:

$$N = F(Kn, Ln, X) \quad (1)$$
$$X = G(Kx, Lx) \quad (2)$$

[19] Taking endogenous growth theory as a starting point, some later studies included exports in regressions with some other variables such as: the domestic saving ratio, the budgetary share of expenditure on human capital and the cost of external borrowing in real terms, etc. See Otani and Villanueva (1990).

Where

Kn, Kx = respective sector capital stocks

Ln, Lx = respective sector labour forces

Partial derivatives give the productivity differentials with the following equation:

$$(G_K/F_K) = (G_L/F_L) = 1 + \delta \qquad (3)$$

Where G_K and F_K are the marginal productivity of capital in two sectors and G_L and F_L are the marginal productivity of labour. Then, δ captures the productivity differential in favour of the export sector. If δ is zero, resources are distributed efficiently.

Differentiation of equations 1 and 2 gives:

$$\dot{N} = F_K \,.\, In + F_L \,.\, \dot{Ln} + Fx \,.\, \dot{X} \qquad (4)$$

$$\dot{X} = G_K \,.\, Ix + G_L \,.\, \dot{Lx} \qquad (5)$$

where In and Ix are the sectoral gross investments, Ln and Lx are the sectoral changes in the labour force, and Fx describes the marginal externality effect of exports on the output of non-exports. Since $Y = N + X$ and $\dot{Y} = \dot{N} + \dot{X}$, and assuming $F_L = \beta(Y/L)$ and $F_K = \alpha$, using the above equations and manipulating them one gets:[21]

$$\dot{Y}/Y = \alpha \,.\, (I/Y) + \beta\,(\dot{L}/L) + [\delta/(1+\delta) + Fx] \,.\, (\dot{X}/X).(X/Y) \qquad (6)$$

When the above regression is estimated, $[\delta/(1+\delta) + Fx]$ is found to be highly significant, indicating the existence of externalities and efficiency differences. Feder then developed his formulation further to disentangle export productivity from export externalities.

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[20] See Kavoussi (1984: 246).

[21] See Feder (1983: 62) for the details of this derivation.

Sheehey (1990 and 1993), on the other hand, argued that these empirical tests have no relevance for the export-promotion – import-substitution controversy. He reached this conclusion by applying the same test for each of the major subcategories of GDP (government consumption; private consumption; agriculture; manufacturing; construction; and electricity, gas and water services), and demonstrating that all give similar results. Sheehey replaced exports with other components of GDP in the above equation and found them all to be significant. Thus, he concluded that '[s]ince it is true [...] that the link between sectoral growth and growth of GDP is common to all sectors, it clearly cannot be due to relative productivity differences and externality effects.'[22]

In a later article, Sheehey (1993) used the same formulation for the non-export sector as a whole. He placed the non-export sector into the equation instead of exports and obtained similar results which proved that Feder's test was inconsistent. At the same time both export and non-export sectors could not be more productive than each other.

He then argued that the failure of the widely accepted interpretations of the production function analysis is based on the assumption of full employment of all resources. A typical assumption of neoclassical economics is that all countries are on their production possibility frontiers and in order to increase production in one sector, resources must be shifted from the others. When this assumption is dropped, it is feasible to increase production in all sectors (including exports) by putting unemployed resources into production.

An alternative test for the externalities of exports

Testing the impact of exports on home goods, however, should be less complicated than the above. A simple Granger causality test between home goods and exports should provide some ideas.[23] If Balassa is right in arguing that exports and the import-substituting production compete over limited resources, there must be, first, a negative

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[22] Sheehey (1990: 115).

[23] Past values of dependent and independent variables are regressed against the current value of dependent variable. We will also include current values of the independent variables for our own purpose. See Gordon and Sakyi-Bekoe (1993) for details of the model.

correlation between a change in current exports and a change in current home goods. And if the proponents of export-led development are also right about the externality effects of exports, there must be a positive correlation between the past values of exports and current values of home goods. We estimate the following linear regression for low-, middle- and high-income countries. The model is written as:

$$H_t = \alpha + \beta_1.H_{t-1} + \beta_2.H_{t-2} + \beta_3.X_t + \beta_4.X_{t-1} + \beta_5.X_{t-2} + u$$

where

H_t and X_t : Growth rates of current values of home goods and exports

H_{t-1}, H_{t-2}, X_{t-1}, X_{t-2} : First and second lags of H_t and X_t

Table 5.1: Causality test for the externalities of exports

	R-Bar-Square	DW	F-test	DF	α	β_1	β_2	β_3	β_4	β_5
Low-income	0.279	1.930	2.704	17	+	+	-	-	-	
Middle-income	0.455	2.015	4.678	17	+	+	+	-	-	-
High-income	-0.034	1.918	0.855	17	+	-	+	+	+	-
OECD	0.044	1.941	1.203	17	+	-	+	+	+	-
Oil exporters	0.551	1.723	6.411	17	+	+			+	-
Primary exporters	-0.019	1.467	0.914	17	+	+	+	-	+	+
Agriculture exporters	-0.019	1.749	0.916	17	+	-	-	-	+	-
Manufacture exporters	-0.018	1.943	0.919	17	+	-	+	+	-	-
Asia (exc. China, India)	-0.069	1.745	0.712	17	+	+	+	+	+	+
Sub Saharan Africa	0.192	1.944	2.048	17	+	-	+	-	-	+
Latin America	0.428	1.863	4.299	17	+	+	+	-	+	-

Source: World Bank Stars Database.

Notes: All oil exporting countries are excluded. Data series cover 26 years (1968-1993).

one-percent significance level

ten-percent significance level

The results in general do not support Balassa's argument. Only for the middle-income countries does current export growth slightly reduce home goods production. For the low- and high-income countries, the correlation is insignificant and for the high-income countries it is positive. The externality argument is only supported for the low-income countries since the second lag of exports is significant at the one-percent level. This result is expected and cannot be considered as confirmation of the export-

led development hypothesis since the low-income countries are usually import dependent and export constrained. In other words, this positive correlation is not the result of a static-efficiency gain from specialisation.

The same regression was estimated for oil, primary commodity, agriculture and manufacture exporting countries. Only for the oil exporting countries is the growth rate of current exports negatively and significantly correlated with the home goods. The others are negative but insignificant except for the manufacture exporters where the coefficient is positive.

The same regression was also estimated for regional groups: Asia (excluding China and India), Sub-Saharan-Africa, Latin America, and the OECD countries. With the exception of the OECD countries, the current and past values of exports were not correlated with home goods production. For the OECD countries, the current value of exports are positively correlated with the home goods at the ten-percent level of significance. From the above results one can conclude that home goods are by and large independent of exports and thus the inclusion of exports into the production function is not justified.

5.4. CAUSALITY

Another important argument concerning the relationship between export growth and economic growth is causality. A strong correlation proves neither the existence of causality between the two variables, nor (if there is causality) does it mean causality runs from exports to economic growth. Most empirical studies, explicitly or implicitly, assume that causality runs from exports to economic growth. As Jung and Marshall (1985) have pointed out, there are several reasons why one should expect export growth to stimulate economic growth:

> First, export growth may represent an increase in demand for the country's output and thus serve to increase real GNP. Second, an increase in exports may loosen a binding foreign exchange constraint and allow increases in productive intermediate imports and hence result in the growth of output. Third, export growth may result in enhanced efficiency and thus may lead to greater output.

> Several possible source of enhanced efficiency present themselves. Contacts with foreign competitors that arise from exporting may lead to more rapid technical change, the development of indigenous entrepreneurship, and the exploitation of scale economies. In addition, this competitive pressure may reduce x-inefficiency and may lead to better product quality. (Jung and Marshall, 1985: 3)

Even though some recent studies have challenged the above view, few have shown an awareness of the importance of causality. For example, Ram (1985: 416) states that 'it is evidently important to be able to make a reasonably satisfactory transition from statements about the correlation patterns to some judgement about the causal structure'. Dollar (1991: 536) recognises 'the possibility that the causation runs in the other direction: from poor growth performance to inward-orientation'. He argues that an external factor, such as a debt crisis, may cause both slow economic and export growth. World Bank researchers are also aware that '[t]he links between trade strategy and macroeconomic performance are not entirely clear' and raise the question of whether 'outward orientation leads to better economic performance or [...] superior economic performance paves the way for outward orientation.'[24] Nevertheless, the vast majority of the literature fails to establish the direction of causality.

Arguments for export-led development have been challenged empirically as well as theoretically. The 'stage of development' comparative advantage theory, for example, argues that some minimum level of economic development is required prior to export-led development. Economic development tends to stimulate exports at the earlier stages of development, whereas exports tend to stimulate economic development after some level of development is attained. It is argued that higher growth rates are not necessarily determined by exports, but some other processes independent of trade policy.[25] The strong correspondence between development level and trade policy orientation suggests that export performance is related to the level of development. As development takes place, the economy becomes stronger, markets become more efficient, and fewer bottlenecks occur. This well functioning economy

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[24] *World Development Report* (1987: 83).

[25] See Pack (1992 and 1988).

facilitates greater penetration into world markets. Thus, Yaghmanian (1994: 1979) argues that economic growth and successful export performance are both determined by the process of development and structural change. Exports and GNP growth may or may not reinforce each other. But as countries become more developed, they are more likely to 'get the prices right', and to follow a more neutral policy stance both with respect to exports and to the domestic economy. Criticising the *World Development Report* (1987), Singer argued that,

> the fact that the category of inward-oriented countries, and specially the strongly inward-oriented countries, consists of poorer countries than the outward-oriented countries [proves that] poorer countries find it more difficult to progress than countries already further up the development ladder, such as the NICs and middle-income countries. (Singer, 1988: 233)

Dodaro also makes the same point by arguing that,

> [t]he fact that it is the better-off countries that are generally classified as outward oriented [...] suggests that some degree of economic development and efficiency is necessary before a country can make any significant inroads in the world market. [...] It may be only when a level of economic development is reached that export promotion – or a neutral policy predicated on getting the prices right – becomes both possible and feasible. (Dodaro, 1991: 1154)

Jung and Marshall argue that even if it is true that the export growth can cause economic growth, it is equally plausible that economic growth may also cause export growth.

> Consider a growing economy where learning and technical change are proceeding rapidly in a few industries. The learning and technical changes that are taking place may have very little to do with any conscious government policy to promote exports or even to promote production in those industries. It may be more related to the accumulation of human capital, cumulative

> production experience, technology transfer from abroad through licensing or direct investment, or physical capital accumulation. That is, important primary causal factors behind this unbalanced growth may be unrelated to any special export promoting incentives and may foster growth even in the absence of such incentives. [...] Given this unbalanced growth, it is highly unlikely that demand for goods from these boom industries will grow as rapidly as their production. Thus producers are likely to turn to foreign markets to sell their goods. The causal relationship in this instance is one that proceeds from output growth to export growth. Although output growth and export growth are likely to be correlated, it would be inappropriate to characterise this situation as one in which export promotion has induced growth. Ordinary correlations between export growth and output growth are unable to discriminate between the export promotion hypothesis and the internally generated exports hypothesis. (Jung and Marshall, 1985: 5)

Using the causality test developed by Granger, Jung and Marshall analyse the direction of causality between export growth and economic growth for 37 countries. The results in general do not support the export-led growth hypothesis. For only four countries,[26] exports seem to promote economic growth. In three countries the reverse is true; economic growth led to higher export growth. For five countries however, the growth of the economy resulted in lower export growth.

Similar results were also obtained in a study of 87 developing countries in a paper by Dodaro (1993). Using the same methodology as Jung and Marshall but employing a different time period and more countries, Dodaro also found no support for neoclassical theory in any of the countries known as the 'Newly Industrialising Countries'. Dodaro's results were in favour of the export-led growth hypothesis only in seven low-income countries. His result also shown only weak support for the contention that GDP growth promotes export growth.

In his research on African and other 'poor' countries, Helleiner (1986) found no correlation between export performance and overall economic performance. Even the advocates of export-led development often admit that, at least for very low-income

[26] Indonesia, Egypt, Costa Rica, and Ecuador.

countries, such correlation is ambiguous and a certain minimum level of development is necessary to see any meaningful correlation between exports and economic growth.[27]

Using the Sims technique, Chow (1987) tests the causality between manufactured exports and manufactured output for eight 'Newly Industrialising Countries' and finds a reciprocal causal relationship.[28] Only for Argentina, which is considered to be one of the most inward-oriented countries, does there seem to be no correlation while only for Mexico, an oil exporter, does causality run from exports to GDP growth.

Studying 66 developing countries, Yaghmanian (1994) estimated cross-section and time-series regressions, by including typical neoclassical variables, share of investment in GDP, population growth rate (as a measure of the labour force) and export growth rate, as well as other variables to take into account of the impact of structural transformation and the process of development on the growth of output. Export growth in his cross-section and time-series analysis was first proven to be significant. But when he replaced population with employment (for 30 countries) to take into account unemployment and underemployment, which are very common in developing countries, exports became insignificant. Consequently, he concluded that his final set of estimations failed to support the neoclassical export-led growth model.

Greenaway and Sapsford (1994) first estimated a production function type growth model using time-series data for 14 countries and found no evidence to support the export-led growth hypothesis. Then, to solve the simultaneity between exports and output and to separate the 'economic influence' of export growth on output growth, they estimated a similar regression by replacing GDP with 'GDP net of exports' (Y-X) and found not only that coefficients were not significant but also that many of them changed sign and became negative.

Before moving to a criticism of time-series analysis and introducing an alternative measure of openness, we will do our own causality tests employing three different causality tests (Granger, Sims and Modified Sims) for different categories of countries. The general procedure for Granger causality tests is to regress the past

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[27] See Michaely (1977: 52), Heller and Porter (1978: 192), Tyler (1981: 192).

[28] These are: Argentina, Brazil, Hong Kong, Israel, Korea, Mexico, Singapore and Taiwan.

values of the dependent and independent variables on the current value of the dependent variable. The Sims model regresses the current, past and future values of the independent variables against the current value of the dependent variable. The Modified Sims model also adds past values of the dependent variable into the Sims model.[29] A third variable, terms of trade (ToT), is also included into equations 2 and 4 since it is assumed to influence both exports and economic growth.

The models can be written as:

Granger:

1. $X_t = \alpha + \beta_1.X_{t-1} + \beta_2.X_{t-2} + \beta_3.Y_{t-1} + \beta_4.Y_{t-2} + u$
2. $X_t = \alpha + \beta_1.X_{t-1} + \beta_2.X_{t-2} + \beta_3.Y_{t-1} + \beta_4.Y_{t-2} + \beta_5.ToT_t + \beta_6.ToTY_{t-1} + \beta_7.ToTY_{t-2} + u$
3. $Y_t = \alpha + \beta_1.X_{t-1} + \beta_2.X_{t-2} + \beta_3.Y_{t-1} + \beta_4.Y_{t-2} + u$
4. $Y_t = \alpha + \beta_1.X_{t-1} + \beta_2.X_{t-2} + \beta_3.Y_{t-1} + \beta_4.Y_{t-2} + \beta_5.ToT_t + \beta_6.ToTY_{t-1} + \beta_7.ToTY_{t-2} + u$

Sims:

5. $X_t = \alpha + \beta_1.Y_t + \beta_2.Y_{t-1} + \beta_3.Y_{t-2} + \beta_4.Y_{t+1} + \beta_5.Y_{t+2} + u$
6. $Y_t = \alpha + \beta_1.X_t + \beta_2.X_{t-1} + \beta_3.X_{t-2} + \beta_4.X_{t+1} + \beta_5.X_{t+2} + u$

Modified Sims:

7. $X_t = \alpha + \beta_1.X_{t-1} + \beta_2.X_{t-2} + \beta_3.Y_t + \beta_4.Y_{t-1} + \beta_5.Y_{t-2} + \beta_6.Y_{t+1} + \beta_7.Y_{t+2} + u$
8. $Y_t = \alpha + \beta_1.Y_{t-1} + \beta_2.Y_{t-2} + \beta_3.X_t + \beta_4.X_{t-1} + \beta_5.X_{t-2} + \beta_6.X_{t+1} + \beta_7.X_{t+2} + u$

[29] For detail of the models see Gordon and Sakyi-Bekoe (1993: 555).

where

Y_t and X_t : Growth rates of current values of GDP and exports

Y_{t-1}, Y_{t-2}, X_{t-1}, X_{t-2} : First and second lags of Y_t and X_t

ToT_t, ToT_{t-1}, ToT_{t-2} : Change in the current and past values of terms of trade

The regressions are estimated for: the low-income, middle-income, high-income countries, the world as a whole, Sub-Saharan Africa, Latin America, East Asia, the OECD, oil exporters, agriculture exporters, primary commodity exporters and manufacture exporters. The results are presented in the table 5.2(b) and summarised in table 5.2(a).

Table 5.2(a): Summary of the causality tests for exports and GDP growth

	From Export Growth to Economic Growth (Xgr ⇒ GDPgr)	From Economic Growth to Export Growth (GDPgr ⇒ Xgr)
Low-income countries	Strong (+)	Weak (+)
Middle-income countries	------	------
High-income countries	Weak (-)	Strong (+)
OECD	Weak (-)	Strong (+)
Oil exporters	Strong (+)	Strong (+)
Primary exporters	------	Weak (-)
Agriculture exporters	Weak (+)	------
Manufacture exporters	Weak (-)	Strong (+)
East Asia	------	Strong (+)
Sub Saharan Africa	Weak (+)	------
Latin America	------	------

Table 5.2(b): Causality tests for exports and GDP growth

Low-income countries

Dept.Var	R-Bar-Squ	DW	F	DF	C	Xt	Yt	Xt-1	Xt-2	Yt-1	Yt-2	Xt+1	Xt+2	Yt+1	Yt+2	ToTt	ToTt-1	ToTt-2
Xt	0.006	2.289	1.038	18	+			+	+	+	-							
Xt	-0.018	2.160	0.941	15	-			+	+	+	+					-	+	-
Yt	0.545	1.783	7.600	18	+			-	+	+	-							
Yt	0.569	1.867	5.154	15	+			+	+	+	+					-	+	-
Xt	0.553	1.937	5.967	15	-		+			+	+			-	+			
Yt	0.556	1.414	6.011	15	+	+		-	+			+	+					
Xt	0.490	2.040	3.753	13	-		+	+	-	+	+			-	+			
Yt	0.491	1.286	3.763	13	+	+		-	+	-	+	+	+					

Middle-income countries

Dept.Var	R-Bar-Squ	DW	F	DF	C	Xt	Yt	Xt-1	Xt-2	Yt-1	Yt-2	Xt+1	Xt+2	Yt+1	Yt+2	ToTt	ToTt-1	ToTt-2
Xt	0.146	1.998	1.941	18	+			-	-	-	+							
Xt	0.477	2.262	3.875	15	-			-	-	-	+					-	-	-
Yt	0.279	1.856	3.138	18	+			+	-	+	+							
Yt	0.191	1.854	1.744	15	+			-	-	+	+					+	-	+
Xt	-0.030	1.986	0.882	15	+		+			-	+			+	-			
Yt	-0.246	0.669	0.209	15	+	-		-	-			-	-					
Xt	0.215	2.380	1.783	13	+		+	-	-	-	+			+	-			
Yt	0.220	1.851	1.808	13	+	+		-	-	+	+	-	+					

High-income countries

Dept.Var	R-Bar-Squ	DW	F	DF	C	Xt	Yt	Xt-1	Xt-2	Yt-1	Yt-2	Xt+1	Xt+2	Yt+1	Yt+2	ToTt	ToTt-1	ToTt-2
Xt	0.417	1.802	4.949	18	+			-	+	+	-							
Xt	0.505	2.320	4.213	15	+			-	+	+	-					-	+	+
Yt	0.273	1.918	3.073	18	+			-	+	+	-							
Yt	0.243	1.961	2.014	15	+			-	+	+	-					+	+	+
Xt	0.720	2.630	11.292	15	+		+			+	-			-	+			
Yt	0.809	1.776	17.983	15	+	+		+	-			+	-					
Xt	0.709	2.011	7.973	13	+		+	-	+	+	-			-	+			
Yt	0.815	2.360	13.626	13	+	+		-	+	+	-	+	-					

World

Dept.Var	R-Bar-Squ	DW	F	DF	C	Xt	Yt	Xt-1	Xt-2	Yt-1	Yt-2	Xt+1	Xt+2	Yt+1	Yt+2	ToTt	ToTt-1	ToTt-2
Xt	0.498	1.595	6.460	18	+			-	-	+	-							
Xt	0.434	1.634	3.418	15	+			-	+	+	-					-	-	+
Yt	0.323	1.850	3.635	18	+			-	-	+	-							
Yt	0.351	1.479	2.703	15	+			-	-	+	+					+	-	-
Xt	0.768	2.910	14.244	15	+		+			-	-			-	+			
Yt	0.861	1.676	25.797	15	+	+		+	-			+	-					
Xt	0.792	1.813	11.903	13	+		+	-	+	+	-			-	+			
Yt	0.860	2.364	18.687	13	+	+		+	+	+	-	+	-					

Sub Saharan Africa

Dept.Var	R-Bar-Squ	DW	F	DF	C	Xt	Yt	Xt-1	Xt-2	Yt-1	Yt-2	Xt+1	Xt+2	Yt+1	Yt+2	ToTt	ToTt-1	ToTt-2
Xt	0.121	1.947	1.758	18	-			+	-	-	+					-	-	+
Xt	0.242	1.881	2.004	15	-			+	-	+	+							
Yt	0.106	2.241	1.656	18	+			+	+	+	+					+	+	+
Yt	0.335	2.120	2.584	15	+			+	+	+	+							
Xt	-0.015	1.656	0.940	15	-		+			-	+			+	+			
Yt	0.144	1.853	1.676	15	+	+		+	+			-	+					
Xt	0.082	1.909	1.255	13	-		+	+	-	-	+			+	+			
Yt	0.050	2.047	1.151	13	+	+		+	+	-	+	-	+					

Latin America

Dept.Var	R-Bar-Squ	DW	F	DF	C	Xt	Yt	Xt-1	Xt-2	Yt-1	Yt-2	Xt+1	Xt+2	Yt+1	Yt+2	ToTt	ToTt-1	ToTt-2
Xt	0.135	1.878	1.860	18	+			-	-	-	-							
Xt	0.441	2.373	3.480	15	+			-	-	-	-					-	-	-
Yt	0.270	1.994	3.039	18	+			-	-	+	-							
Yt	0.172	2.039	1.653	15	+			-	-	+	-					+	-	-
Xt	0.104	2.172	1.465	15	+		+			-	+			+	-			
Yt	0.141	1.067	1.660	15	+	-		-	-			-	-					
Xt	0.169	2.195	1.581	13	+		+	-	-	-	+			+	-			
Yt	0.254	2.023	1.976	13	+	-		-	-	+	-	-	-					

East Asia

Dept.Var	R-Bar-Squ	DW	F	DF	C	Xt	Yt	Xt-1	Xt-2	Yt-1	Yt-2	Xt+1	Xt+2	Yt+1	Yt+2	ToTt	ToTt-1	ToTt-2
Xt	0.407	1.757	4.779	18	+			-	-	+	-							
Xt	0.427	1.552	3.348	15	+			-	-	+	-					+	-	-
Yt	-0.204	1.807	0.066	18	+			+	+	+	-							
Yt	-0.325	1.794	0.227	15	+			+	-	+	-					+	+	+
Xt	0.100	1.952	1.446	15	+		+			+	-			+	-			
Yt	0.477	1.639	4.655	15	+	+		+	+			+	-					
Xt	0.390	1.475	2.827	13	+		+	-	-	+	-			+	-			
Yt	0.410	1.840	2.990	13	+	+		+	+	+	-	+	-					

OECD countries

Dept.Var	R-Bar-Squ	DW	F	DF	C	Xt	Yt	Xt-1	Xt-2	Yt-1	Yt-2	Xt+1	Xt+2	Yt+1	Yt+2	ToTt	ToTt-1	ToTt-2
Xt	0.405	1.864	4.748	18	+			-	+	+	-							
Xt	0.460	2.354	3.681	15	+			-	+	+	-					-	-	+
Yt	0.242	1.965	2.764	18	+			-	+	+	-							
Yt	0.217	2.028	1.872	15	+			-	+	+	-					-	-	+
Xt	0.706	2.552	10.609	15	+		+			+	-			-	+			
Yt	0.800	1.625	17.025	15	+	+		+	-			+	-					
Xt	0.712	1.928	8.074	13	+		+	-	+	+	-			-	+			
Yt	0.795	2.249	12.140	13	+	+		-	+	+	-	+	-					

Oil exporters

Dept.Var	R-Bar-Squ	DW	F	DF	C	Xt	Yt	Xt-1	Xt-2	Yt-1	Yt-2	Xt+1	Xt+2	Yt+1	Yt+2	ToTt	ToTt-1	ToTt-2
Xt	0.028	1.765	1.162	18	+			-	+	+	-							
Xt	0.526	1.866	4.488	15	-			-	+	+	-					-	-	+
Yt	0.397	1.854	4.633	18	+			-	+	+	-							
Yt	0.455	1.870	3.625	15	+			-	+	+	-					-	-	+
Xt	0.515	1.045	5.263	15	-		+			-	-			-	+			
Yt	0.382	0.594	3.478	15	+	+		-	+			+	-					
Xt	0.582	2.018	4.981	13	-		+	+	-	-	-			-	+			
Yt	0.703	1.693	7.786	13	+	+		+	+	+	-	+	-					

Agriculture exporters

Dept.Var	R-Bar-Squ	DW	F	DF	C	Xt	Yt	Xt-1	Xt-2	Yt-1	Yt-2	Xt+1	Xt+2	Yt+1	Yt+2	ToTt	ToTt-1	ToTt-2
Xt	-0.072	2.007	0.626	18	+			+	-	+	+							
Xt	-0.198	2.086	0.479	15	+			+	-	+	+					-	-	-
Yt	-0.146	1.886	0.297	18	+			+	-	+	-							
Yt	0.210	2.250	1.839	15	+			+	+	+	-					+	-	+
Xt	-0.193	1.680	0.352	15	+		-			-	+			+	-			
Yt	0.008	1.692	1.034	15	+	-		+	-			+	+					
Xt	-0.210	2.152	0.503	13	+		-	+	-	+	+			+	-			
Yt	-0.099	1.634	0.741	13	+	-		+	-	+	-	-	+					

Primary commodity exporters

Dept.Var	R-Bar-Squ	DW	F	DF	C	Xt	Yt	Xt-1	Xt-2	Yt-1	Yt-2	Xt+1	Xt+2	Yt+1	Yt+2	ToTt	ToTt-1	ToTt-2
Xt	0.144	1.555	1.925	18	+			+	+	-	+							
Xt	0.415	1.206	3.229	15	+			+	+	-	+					+	-	+
Yt	-0.110	1.950	0.451	18	+			+	+	-	+							
Yt	-0.309	1.995	0.256	15	+			+	+	-	+					-	+	-
Xt	0.204	1.385	2.029	15	+		-			-	+			+	+			
Yt	0.241	1.154	2.276	15	+	+		+	+			-	+					
Xt	0.102	1.549	1.326	13	+		-	+	+	-	+			+	+			
Yt	0.205	1.459	1.741	13	+	+		+	+	+	-	-	+					

Manufacture exporters

Dept.Var	R-Bar-Squ	DW	F	DF	C	Xt	Yt	Xt-1	Xt-2	Yt-1	Yt-2	Xt+1	Xt+2	Yt+1	Yt+2	ToTt	ToTt-1	ToTt-2
Xt	0.387	1.780	4.481	18	+			-	+	-	-							
Xt	0.489	2.263	4.017	15	+			-	+	+	-					-	+	+
Yt	0.246	1.963	2.796	18	+			-	+	+	-							
Yt	0.252	2.157	2.063	15	+			-	+	+	-					+	+	+
Xt	0.599	2.462	6.983	15	+		-			+	-			-	+			
Yt	0.730	1.666	11.833	15	+	+		-	-			-	-					
Xt	0.622	1.816	5.710	13	+		-	-	+	+	-			-	+			
Yt	0.727	2.330	8.643	13	+	+		-	-	+	-	-	-					

significant at one percent level
significant at ten percent level

The results are interesting, but not surprising. For the low-income countries, there is strong support for causality running from exports to GDP growth. The second lag of exports is consistently positive and significant at the one-percent level in equations 3, 4, 6 and 8. Future values of GDP growth in equations 5 and 7 also make the same point. This is not surprising and confirms the earlier empirical work on externalities.[30] As was argued earlier, low-income countries usually are import dependent and export demand constrained and a positive causality from exports to GDP growth is not the result of a static-efficiency gain. Equation 1 also suggests a weak causality from GDP growth to exports at the ten-percent level. The current values of exports and income are not correlated and the terms of trade do not appear to have a significant impact.

For the middle-income countries, there seems to be no causality between exports and economic growth. The only slightly significant item is the terms of trade which have a negative impact on exports. The current values of exports and income are not correlated.

For high-income countries and the world as a whole,[31] there is clear causality running from GDP growth to export growth. And there is a weak negative causality from exports to GDP growth. The current values of exports and income are strongly correlated.

With regard to the other categories, not surprisingly, there is a similar pattern for the OECD, the manufacture exporting and the high-income countries. The OECD countries are high-income countries which usually export manufactured commodities. The causality runs clearly from GDP growth to export growth. For Sub-Saharan Africa, there seems to be a very weak causality from exports to income growth. The terms of trade, however, seem to have a positive impact on income growth. For Latin American countries, there is no clear pattern. There is clear causality from income to exports for the East Asian countries. For the oil producing countries, there seems to be correlation both ways and the current values are also strongly correlated. The terms of trade for these countries have a negative sign which is very difficult to interpret. For the agriculture and primary commodity exporting countries, causality between the two variables seems to be very weak. For the agriculture exporting countries there is a

[30] See Table 5.1.

[31] The high-income countries account for around 70 percent of total world production.

very weak causality from exports to GDP growth and for the primary commodity exporters a negative causality from GDP growth to exports growth. The terms of trade also appear to have a negative impact on exports.

5.5. CRITIQUE OF TIME-SERIES ANALYSIS

In the literature, cross-country analyses usually produce more favourable results for the export-led development hypothesis than time-series analysis. This inconsistency has puzzled many researchers. Why should the two different methods give conflicting results? In the next chapter we will attempt to solve this puzzle by arguing that there is no real inconsistency between the results of these two techniques. The argument will be that the results reveal fallacies of composition. Indeed, relatively better export performance may result in relatively better economic performance. This does not mean, however, that when all the countries increase their export performances they will all grow faster. In this section, however, it will be argued that time-series analysis is more problematical than cross-sectional analysis.

Econometricians usually favour time-series to cross-country analysis. This is particularly true when the causality between variables is not clear. Cross-country analysis can only provide evidence for the correlation but not for the causality. Cross-country analysis is also believed to overgeneralize, failing to account for the specific circumstances of the countries. Ram argues that,

> [e]stimates obtained from cross-section data are useful in many ways, especially when the number of observations for individual countries is small. However, there is evidence of tremendous parametric variations across countries in regard to estimates of the growth equations typically used in such contexts. Imposition of a common structure in the form of cross-section models can be a drastic simplification and important parametric differences could be masked in cross-section estimates even when the samples chosen look fairly homogeneous with reference to certain prior criteria. It seems important, therefore, to make a beginning toward an assessment of the export-

growth nexus for individual countries on the basis of time-series data. (Ram, 1987: 52)

Moreover, the availability of data for countries included in analyses can cause serious problems. For example, as Ram also points out, some studies cover various groups of developing countries for different time periods which reduces their validity in deducing meaningful results.

Most cross-sectional studies, as well as time-series analyses, are irrelevant to the question of the benefits of export-led development. Cross-sectional studies usually indicate a strong positive correlation between economic growth and export growth. This is mistakenly interpreted as evidence for the export-led development hypothesis. Without providing causal evidence, however, these results can be interpreted in either way. Time-series analysis, on the other hand, has the advantage of providing evidence of causality which is sufficient to reject or accept the hypothesis.

Despite its shortcomings, cross-country analysis may provide better information about the nature of the trade-GDP growth relationship if the model is carefully constructed. Time-series analysis, however, has more problems than are recognised in the literature.

First, as argued earlier, the bivariate as well as the production function type of regressions used to verify the benefits of export-led development miss a fundamental point. Exports are, indeed, part of total GDP, and there is autocorrelation. When exports are introduced into the production function, the problem is assumed away but not solved.

Second, time-series analysis focuses on the short-term relationship between exports and economic growth. The real benefits of an open economy, however, may be actualised in the long-run as endogenous growth theories suggest.[32] A narrow focus on the immediate effects of trade might be misleading.

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[32] To give an example, there probably is a very strong correlation between one's diet and one's health but this does not mean that one's health will deteriorate immediately if one fails to intake enough nutrients for a short period of time. Thus the real impact of diet can only be seen in the long-run. And since health is also affected by many other factors (such as age, social class, genetic factors, etc), a cross-sectional analysis where many individuals are observed (and other factors are controlled) would provide more meaningful results than simply observing one's eating habits and health through time.

Third, as most developing countries are export demand constrained and import dependent, a positive correlation between export performance and economic growth is inevitable and causality may run from exports to GDP growth. This, however, does not necessarily prove export-led development hypothesis since the impact of trade on economic growth is not a result of a static-efficiency gain but of increased effective demand.

Fourth, fluctuations in both variables can be caused by a third, external factor, such as a demand shock, an oil price shock or a debt problem, which would produce a positive correlation between them, even if they were uncorrelated.

Fifth, exports may be important for domestic production for many developing countries since many of them are import dependent. But exports, particularly in the short-run, are not the only source of foreign exchange. Aid and borrowing may reduce the observed correlation, obscuring the impact of exports on GDP growth. For example, in a particular year, were exports to fall dramatically, a country might be able to import by borrowing, and, in the next year when exports increase, the debt could be paid back. Consequently, there would be no observed correlation between export growth and GDP growth.

Sixth, a weak or a strong correlation may indicate the size of exports compared to the economy, rather than a meaningful relationship between exports and development. It is well-known that more open economies are more vulnerable to external shocks. If a country trades very little, there will be a very weak correlation between exports and GDP growth. However, this cannot be interpreted as evidence against export-led development. The same can be said for an open economy in which there is a strong positive correlation between export growth and GDP growth. If the demand for exports of a very open economy declines as a result of a demand shock and GDP follows it, there will be a positive correlation between them. A negative correlation is almost impossible between exports and GDP unless exports remove resources from other alternative uses and waste them. But a positive correlation can be observed even if exports reduce GDP growth. Thus neither a weak correlation nor a strong correlation in time-series analysis can be considered a good evidence for or against the export-led development.

Seventh, if one accepts the 'stage of development' argument, the causality tests become hollow as the impact of exports depends on the level of development of the economy. It is argued that competitiveness in international markets depends on the strength of the economy which is a function of its development level. It is also argued that, due to the existence of scale economies, external trade will become more important only after domestic markets are exhausted. Thus, the impact of trade will depend on the level of development as well as the size of the economy. As the contribution of exports to overall development depends on the conditions of the economy, time-series causality tests will be misleading. Even if one could establish a strong correlation and causality for one country, this cannot be evidence for or against the export-led development thesis, since the results would depend on the specific circumstances of the country in question.

Finally, time-series analysis has specific technical problems; for example, when variables are not stationary even after taking the first difference.[33] Results also depend on the length of the time-series. The number of observation is often an important problem, particularly for the causality tests in which degrees of freedom are lost. Moreover, as Gordon and Sakyi-Bekoe (1993: 561) point out, the causality conclusions are sensitive to the different tests used, to the lag specification of the variables, and to the structure of the error terms. Though there are techniques to deal with these problems, they complicate regressions, and it is difficult to interpret the results.

In brief, since the benefits of an open economy may be actualised in the long-run, since the structure of the economy is an important factor and since external factors cannot be controlled in time-series analysis, the results cannot provide adequate evidence to support or reject the export-led development arguments.

5.6. A CRITIQUE OF DOLLAR'S OPENNESS INDEX

As argued earlier, measuring openness or 'outward-orientation' across countries is a considerably difficult task. There are technical and conceptual problems. In a 1992 article, Dollar produced an 'index of trade liberalisation', which subsequently became

[33] This is the case for GDP growth for some countries.

popular and was widely used. The index is based on Hecksher-Ohlin comparative advantage theory and on the view that trade barriers cause higher prices. Dollar adjusted national price levels with factor endowments, and used the difference between actual and predicted price levels as a measure of trade liberalisation. In his study, Dollar defined outward-orientation (or liberalisation) as a combination of two factors: a low level of protection, especially for inputs into the production process; and, relatively little variability in the real exchange rate, so that incentives are consistent over time.

Recognising the difficulties in measuring trade liberalisation, Dollar developed a new technique based on a cross-country index of real exchange rate distortions. He argued that if there was free trade, the prices of tradable commodities would be equalised across countries. However, average prices would not be completely equalised, as a result of price differences in nontradable commodities. The prices of nontradables are determined by factor endowments. As developed countries are labour-scarce and most nontradables are labour-intensive, the wages and the prices of nontradables are higher in developed countries compared to developing countries. Dollar argues that this could be used as a benchmark to measure real exchange rate distortions. Given its factor endowments, if a country has a higher price level than predicted, the country is assumed to have an overvalued real exchange rate, reflecting protectionist trade policies.

To calculate real exchange rate distortions, Dollar used the international comparison of prices prepared by Summers and Heston (1988). Summers and Heston calculated the overall price level of countries by pricing the same basket of consumption goods in domestic currency in different countries and converting it into US dollars. By using the United States as the benchmark country, a relative price level (RPL) index was calculated as:

$$RPLi = 100 * e (Pi/Pus)$$

where 'e' is the nominal exchange rate, Pi is the consumption price index for country 'i' and 'Pus' is the consumption price level in the United States. This formulation is

similar to the usual measure of the real exchange rate, except that price indices employed have the same weights in each country.

If there were no barriers to trade and no nontradable commodities, this measure would be 100 for all countries should the 'Law of One Price' hold. Hence, the price level could be taken as a measure of trade orientation. However, the existence of nontradables makes the calculation more complicated. Even if there was complete free trade, the price levels of the countries would not all be 100, but would vary according to factor endowments. Price level can only be used to measure trade orientation after the variation in prices due to different factor endowments is taken into account. This can be done by regressing the price level on the country's endowments. Dollar used GDP per capita and population density as measures of endowments. GDP per capita is a measure of the relative per capita factor availability and population density is a measure of land availability. One would expect more densely populated countries to have higher prices for nontradables, as nontradables include housing services.

The residuals from this regression were used as the measure of trade orientation. A country above (below) the line has a higher (lower) price level than can be justified by its endowments and is considered to be relatively inward (outward) oriented. Dollar's regressions indicated a strong positive relationship between per capita income and price level as he expected. On the other hand, there was no clear relationship between the price level and population density. Assuming that orientation is achieved through a low level of protection and a stable real exchange rate, he addressed the question of whether outward-oriented economies grow more rapidly. To control other variables that may influence growth, investment was included in the regression along with exchange rate distortion and variability. His regressions showed that growth was positively associated with the investment rate and negatively associated with distortion and variability of the real exchange rate.

Theoretical problems of Dollar's approach

Even though Dollar's index has become increasingly popular, it has serious theoretical weaknesses. The empirical work presented in this section raises doubts about the validity and consistency of the index. The problems of the index are as follows.

First, even though Dollar's objective was to provide evidence that outward-oriented developing countries grow more rapidly, the index he produces does not measure trade orientation. It attempts to measure trade liberalisation. As argued earlier, whether more open economies grow faster is a separate issue from whether trade liberalisation brings about a more open economy.

Second, the Dollar index does not even measure trade liberalisation, but it attempts to measure real exchange rate distortions. Trade policies cannot be reduced to exchange rate policies. A country may not have real exchange rate distortions, but may have various types of protectionist and promotionist, non-free trade policies. Moreover, as Rodrik (1994) argues, different types of trade-restricting policies may have different influences on the Dollar index. For example, a tariff will raise the domestic price of tradables as a whole, and an export tax will reduce it. 'Judging by the Dollar index, the country that restricted trade through export taxation will appear as if it has just become more open.'[34]

Third, the Dollar index does not even measure real exchange rate distortions, since the correlation between per capita GNP and the price level has a more complex nature than that which he presumes. A country might have a higher or lower price level than can be justified by its 'factor endowments', yet it may have a competitive real exchange rate. This section shows that the relative average price levels between countries are determined by the relative productivity levels of tradables and nontradables. This relationship is complex and will be explained in detail. First, however, the theoretical foundations of the Dollar index will be criticised.

The Dollar index is based on the Hecksher-Ohlin theory of comparative advantage. Consequently, its theoretical foundations are weak and misleading. Hecksher-Ohlin theory argues that prices in developed countries are higher as a result of higher wages, and wages are higher because developed countries are capital-

[34] Rodrik (1994: 49).

abundant and labour-scarce. From a non-orthodox point of view, however, the level of wages is irrelevant to price determination. According to labour value theory, the relative prices of commodities are determined by relative productivity. If money is 'commodity money', such as gold and silver, and competitive devaluations are not possible, a lower average price level is expected in a highly productive developed county. That is the reason why Ricardo, in his famous example,[35] assumed a high price level for the low-productivity country (England), and a low price level for the high productivity country (Portugal). In Ricardo's model, the price level is determined by the overall level of productivity. The level of real wages is determined by the overall productivity level and the factoral distribution of income. Any increase in wages beyond an increase in productivity would reduce the profit rate and not have any impact on the price level.

Dollar argues that when a free trade policy is adopted,[36] the prices of the tradables are determined by the international price levels and are the same for all countries. This implies that the prices of tradables are independent of the domestic wage level. The prices of domestic goods, however, are determined by the level of wages. Thus, differences in the international average price levels can only be explained by the relative prices of nontradables, which, in turn, depend on factor endowments and wages. Since it is difficult to obtain detailed information for factor endowments of many countries, Dollar uses GNP per capita as an indirect measure.

Dollar uses per capita GNP as a measure of relative factor endowments, rather than as a measure of the relative productivity level.[37] He expects a positive correlation between GNP per capita and the price level since high-income countries are assumed to be labour-scarce and real wages are higher. As argued earlier, from the Ricardian point of view, one would expect a negative correlation between the price level and

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[35] See chapter one.

[36] Assuming that countries are small and unable to influence international prices.

[37] It is obvious that average productivity and real wage levels are strongly correlated. Moreover, higher productivity is a result of a higher capital-labour ratio and thus reflects 'capital-abundance'. If one assumes the factoral distribution to be the same in all countries, the real wage level would reflect the overall productivity level. Nevertheless the terminological differences between these two approaches are clear. In the Ricardian model, the prices and the wage levels are determined by the average level of productivity. The price level is negatively and the real wage level is positively correlated with productivity. In the Heckscher-Ohlin model, however, the real wage level and prices are determined by factor endowments. Dollar uses GNP per capita for not what it is (average productivity level) but what it represents (factor endowment).

GNP per capita, as higher productivity means lower prices in general. How can this contradiction be explained? The answer to this question is related to exchange rate devaluations for competitiveness.

The assertion that, under free trade conditions, the prices of nontradables (and thus average prices) are determined by the level of wages cannot be justified unless one assumes completely different profit rates for exportables and nontradables. According to the logic of Dollar's approach, since prices are externally determined (and fixed) for exportables, any increase in the wage rate would result in a reduction in the profit rate of exporters. This is not so for nontradables. Producers of nontradables can pass on the increase in wages to prices and maintain their profit rates. This is the reason why Dollar argues that in developed countries, where wages are higher, average prices are also higher. Even though there is no reason why profit rates for all commodities should be exactly the same in both sectors, there must be a limit to this profit rate differential. If production of nontradables is more profitable, then the production of exportables will decline. This, however, cannot be sustained in the long-run and a devaluation of the exchange rate which increases the profitability of the export sector compared to nontradables would distribute the cost of an overall wage increase in the economy equally to both sectors. Thus, even under free trade conditions, the relative prices of exportables and nontradables are determined by their relative productivity levels. It is a false argument to suggest that free trade would equalise the prices of tradables and leave the prices of nontradables intact.

A change in the nominal exchange rate (in order to keep a competitive real exchange rate) is the only plausible explanation for a positive correlation between per capita GNP and the average price level. International competitiveness can be achieved either by increasing the productivity of exportables or by devaluing the currency. When competitiveness is achieved as a result of productivity increase, the nominal exchange rate tends to appreciate. Developing countries rely more on competitive devaluations. Devaluations, however, reduce average domestic prices in international currency units (i.e. US dollar).[38] This can be explained by the following:

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[38] This fact is very well-known and unless price differences as a result of exchange rate devaluations are taken into account, per capita GNP underestimates the level of economic development in developing countries. In order to have a more accurate measure of economic development, per capita

The average domestic price level can be calculated as:

$$P = a.P_X + b.P_M + c.P_{HG} \quad (1)$$

where

P	: Average domestic price level
P_X	: Domestic price of exportables
P_M	: Domestic price of importables
P_{HG}	: Domestic price of nontradables
a, b, c	: Share of the sectors (a + b + c = 1)

The above equation consists of three parts. The first part is the average price of exportables, the second part is the average price of importables and the third part is the average price of home goods. The average price level in international currency is:

$$ER.P = ER.a.P_X + ER.b.P_M + ER.c.P_{HG} \quad (2)$$

where ER is the nominal exchange rate.[39] Under free trade conditions, the first and the second parts are determined by the international prices of the tradables:

$$ER.P_X = P_{XI} \quad (3)$$

$$ER.P_M = P_{MI} \quad (4)$$

where

P_{XI}	: International price of exportables
P_{MI}	: International price of importables

GNP levels need to be adjusted with the price level. This measure is called purchasing power parity (PPP).

Equations 3 and 4 imply that, as long as the international prices of tradables stay constant, their average domestic price level in international currency is independent of the domestic price changes. The domestic prices of importables are determined by their international prices and by the nominal exchange rate. Any change in the domestic prices of exportables will be matched by a change in the nominal exchange rate. The competitive exchange rate is given by:

$$ER = P_{XI} / P_X \qquad (5)$$

Equation 5 implies that any change in the price of exportables (both P_{XI} and P_X) requires an adjustment of the nominal exchange rate. For example an increase (decrease) in P_X would require a depreciation (appreciation) of the nominal exchange rate. An increase (decrease) in P_{XI}, however, would require an appreciation (depreciation) of the nominal exchange rate.

Given the nominal exchange rate, an increase in productivity of home goods would reduce the average price level. Thus one would expect a lower (higher) average price level for developed (developing) countries. However, equation 5 suggests that the impact of a productivity increase for exportables on the average price level is rather different than a productivity increase in home goods. A productivity increase in exportables would require an appreciation of the nominal exchange rate, which in turn would increase the average price level. An appreciation is required to keep the first part (exportables) of equation 2 constant (otherwise the exchange rate would be undervalued). An appreciation of the nominal exchange rate, however, would increase the third part (home goods) of the equation, and increase the average price level. The second part (importables) of the equation would stay constant as an appreciation of the nominal exchange rate would be matched by a decrease in the domestic prices of importables.

From the above, it is clear that a country's average price level is formed in a complex manner. An increase in the productivity of exportables would increase the average price level in international currency, and a productivity increase in home goods and importables would reduce it. A number of other factors, such as the trade

[39] Note that a fall in the nominal exchange rate (ER) implies a depreciation of the currency.

ratio, the elasticity of demand for exportables and the structural characteristics of the economy, may also contribute to the determination of relative prices. The trade ratio (the coefficients in equation 2) differs from country to country and also needs to be taken into account. Demand conditions for exportables may also be an important factor in determining the level of necessary devaluation and thus the price level. Demand conditions may differ from commodity to commodity. For primary and agricultural commodities, where relative demand tends to decline, one may expect competitive devaluations, and lower average price levels for those countries that rely heavily on the exportation of such commodities. The sectoral structure of the economy may also be an important factor. For example, if a country has a very large and powerful financial sector, the currency might be 'overvalued' and the average price might be higher. The same is true for oil exporting countries.

The above arguments have important implications for the Dollar index. If productivity changes for exportables and home goods influence the average price level in opposite ways, and if there are a number of other factors that may influence the average price, one should not expect a simple correlation between per capita GNP and the average price level. The residuals from such correlations cannot be interpreted as real exchange rate distortions. A country might have a perfectly competitive exchange rate and higher (or lower) average price level than 'can be justified' by its endowments. Consequently, it is not surprising that Dollar's results indicate very high exchange rate distortions for Korea and Taiwan and a low exchange rate distortion for Peru. When the complex nature of price formation is recognised, there are no 'anomalies' to explain.

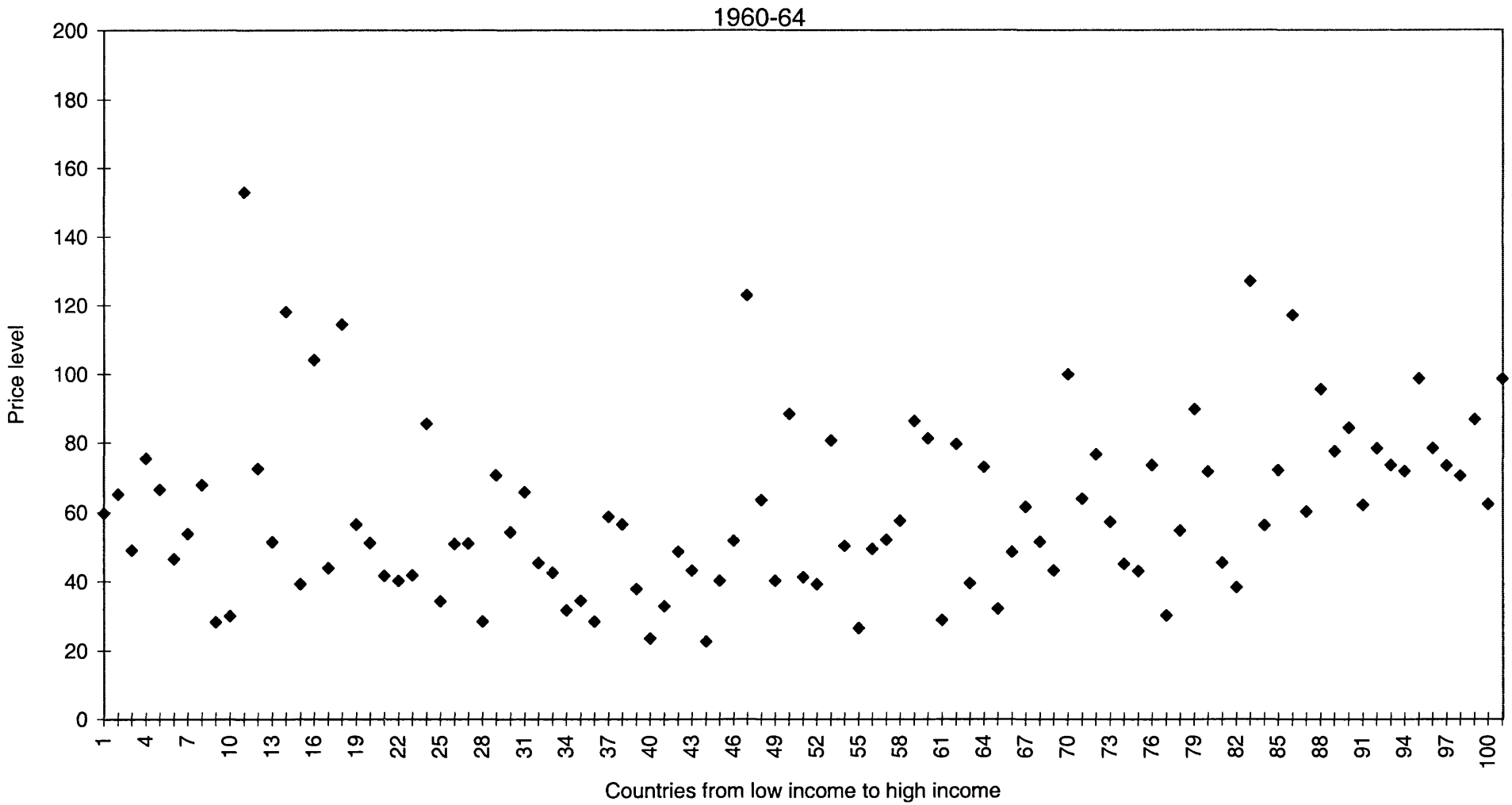
Empirical validity of the Dollar index

Dollar's arguments can also be challenged empirically. In his regressions, the significance levels of the coefficients between the Dollar index and economic growth rates are surprisingly and suspiciously high. This is suspicious because if the 'realistic' exchange rate has any impact on GDP growth, it must come from increased trade. If the Dollar index is an accurate measure of openness, trade liberalisation or real exchange rate distortions, it must first be correlated with trade performance: trade

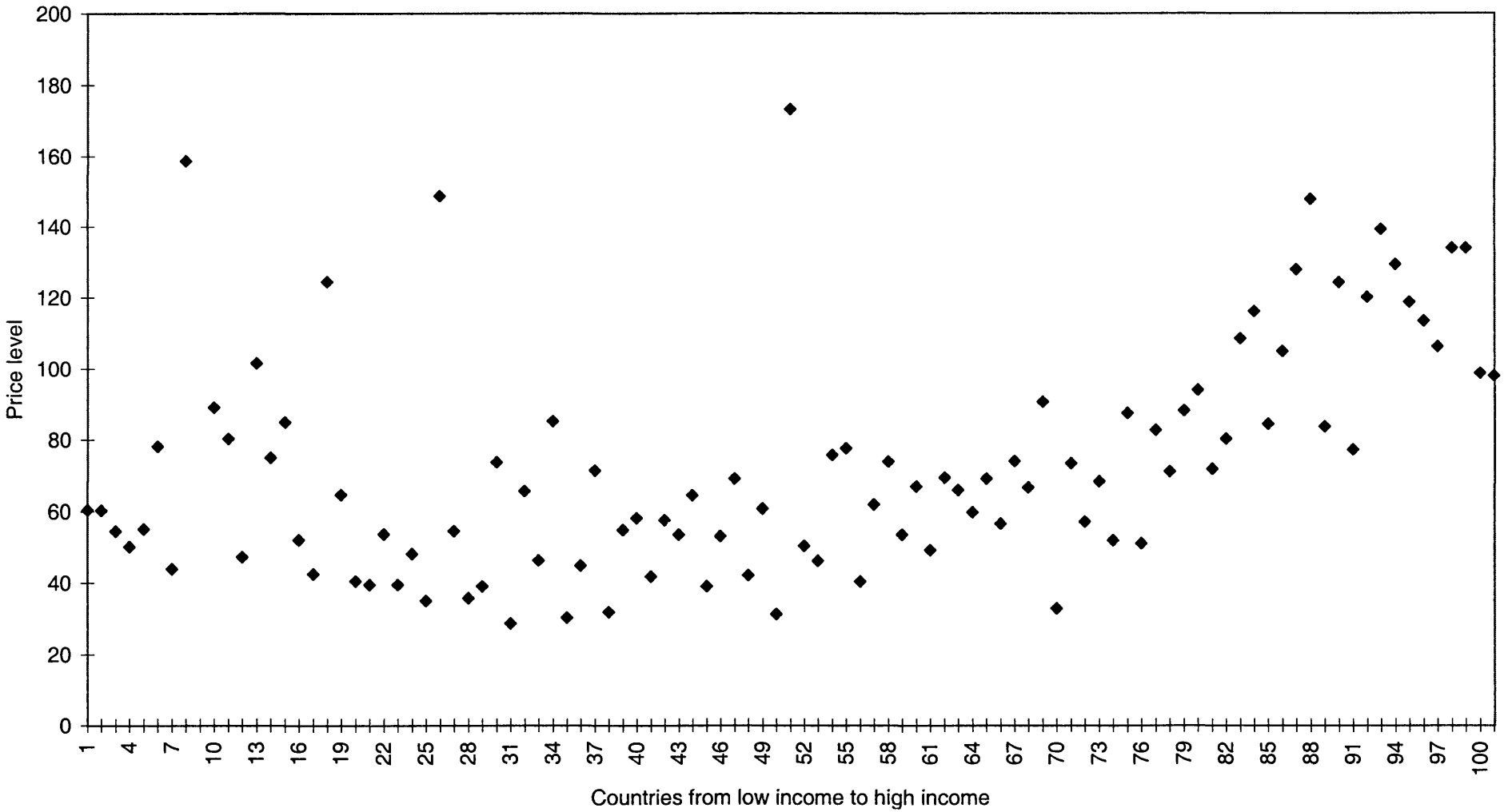
policy improves economic performance through trade performance. His regressions between the Dollar index and economic growth rates is based on two assumptions. First, it is assumed that the index is a good measure of real exchange rate distortions. Second, it is assumed that real exchange rate distortions significantly reduce trade performance. The real exchange rate, however, is only one of many factors that can influence export performance. Moreover, as will be argued in chapter seven, the relationship between the real exchange rate and export performance is not as simple as is usually assumed. Thus, to prove that the Dollar index has any impact on GDP growth, one first must prove that the index has an impact on trade performance.

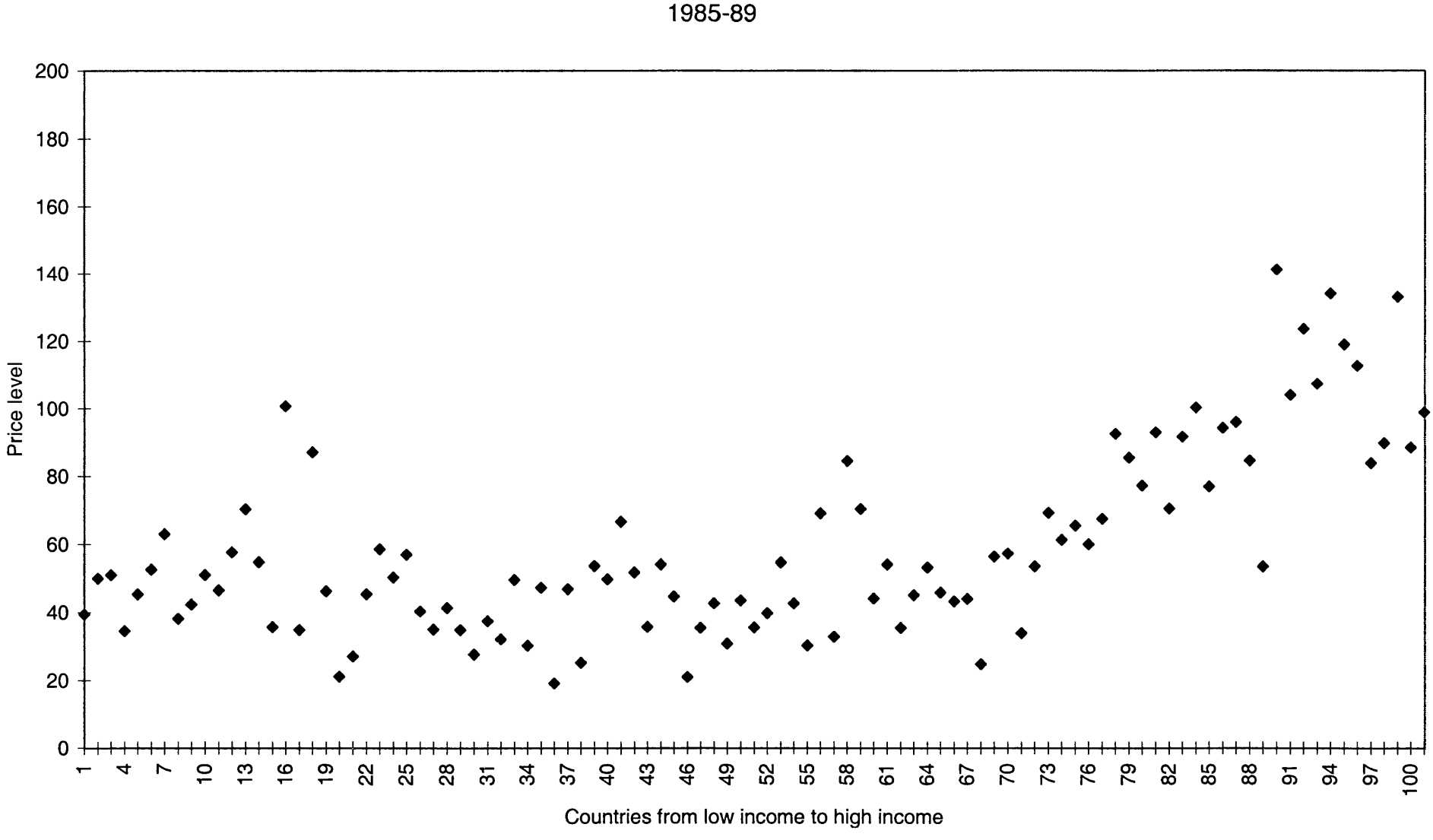
Before the possibility of a correlation between the Dollar index and trade performance is investigated, an anomaly of the index should be noted. Dollar's argument is based on a positive correlation between the price level and per capita GNP. If these two are not correlated, the Dollar index cannot be calculated. Even though there is a strong correlation between the variables when all countries are included in the regression, when countries are sub-divided into categories according to their level of income (low, middle and high), the correlation disappears for the low- and middle-income countries. A strong correlation only holds for high-income countries. Figure 5.1 shows that in the earlier periods (i.e. 1960-64), there is no apparent correlation even for the high-income countries. Even though, through time, a positive correlation appears for the high-income countries, there is no such correlation for the low- and middle-income countries, even in the last period (1985-89). This simply means that when the developed countries are excluded, the Dollar index cannot be calculated. If we want to see, for instance, whether more open African economies grow faster, we will not be able to calculate the Dollar index by using only African countries since prices and GDP per capita are uncorrelated for that region. Nevertheless, one could still argue that, even though there seems to be a lack of correlation between the price level and GDP per capita for the low- and middle-income countries, this itself might be evidence of a very strong overvaluation for some countries. Thus, one could take the estimating line when all the countries are

Figure 5.1: Average price levels of countries



1975-79


Price level
200
180
160
140
120
100
80
60
40
20
0
1
4
7
10
13
16
19
22
25
28
31
34
37
40
43
46
49
52
55
58
61
64
67
70
73
76
79
82
85
88
91
94
97
100
Countries from low income to high income


1985-89
Price level
200
180
160
140
120
100
80
60
40
20
0
1
4
7
10
13
16
19
22
25
28
31
34
37
40
43
46
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94
97
100
Countries from low income to high income

included in the regression as a bench-mark and calculate a Dollar index for the low- and middle-income countries as Dollar does.[40] Alternatively, the low- and middle-income countries can also be categorised according to their actual price levels rather then price levels that are adjusted by the per capita income.

A good criteria for accurateness of the Dollar index as a measure of the real exchange rate overvaluation is to check whether it is correlated with export performance. If the Dollar index is a good measure of real exchange rate distortion, one would expect a very strong correlation between the Dollar index and export performance, and a somewhat weaker correlation between the Dollar index and the GDP growth rate as export performance is only one of many factors that contribute to overall economic performance. To investigate the accuracy and the consistency of the Dollar index, the following regressions were estimated for different time periods and for different country groups.

1. GDPgr = f (DI + I/GDP)
2. Xgr = f (DI)

where

GDPgr : GDP growth rate
I/GDP : Share of investment in total production
Xgr : Export growth rate
DI : Dollar index

The first regression is similar to Dollar's regressions in table 5, except that real exchange rate 'variability' is not included. The second regression captures the impact of the Dollar index on export performance. The Dollar index is calculated for different time periods and different country groups using the same technique as Dollar used. The results are presented in table 5.3.

[40] Inclusion of the square root of GNP per capita in the regression or using the logarithmic form allows the non-linear function to be linear in the parameters.

The message from the table is clear. There seems to be no consistent relationship between the Dollar index and GDP growth rates. The coefficients are in some cases positive and in the earliest period (1961-75) insignificant except for the middle-income countries. The correlation becomes significant towards the 1980-90 period. For the middle-income countries the correlation is negative and significant for all periods. For the high-income countries, however, it is positive and significant. For the low-income countries, it is positive and significant for the 1961-75 period and then it becomes negative and significant.

When Dollar calculates his index, he includes the high-income countries in his regression (because otherwise the index cannot be calculated), but when he estimates the regressions between the Dollar index and GDP growth, he excludes them. This is because inclusion would reduce the significance level of the regressions. Dollar justifies the exclusion of the high-income countries by arguing that the impact of openness on them would be different than on developing countries. It is not clear, however, why the high-income countries should benefit from 'overvalued' exchange rates. The results of the first regression shed further doubts on the validity of the Dollar index as a measure of real exchange rate distortion.

The second regression creates even bigger problems for the Dollar index. As argued earlier, if the Dollar index has any impact on GDP growth, it must be through its impact on export performance. The evidence presented in the table is disappointing for the index. Not only is the correlation not always negative but also in no case it is negative and significant at the one-percent level. For example, for the 'low- and middle-income' countries in 1975-90 period, there is a strong negative correlation between the Dollar index and GDP growth, but no significant correlation between the Dollar index and export growth. Thus, it is very difficult to justify the conclusion of Dollar's article.

How can one explain the strong correlation between the Dollar index and the GDP growth rate? A correlation does not prove causality. Dollar assumes causality running from the Dollar index to GDP growth. We have established, however, that causality does not run from the Dollar index to GDP growth. It could be argued that causality may run from GDP growth to the Dollar index. Perhaps the fast-growing

Table 5.3: Regressions to test the validity and consistency of the Dollar index.

All countries

	GDPgr = f (DI + Igr)		Xgr = f (DI)
Time periods	DI	Igr	DI
1961-75	1.604	5.699	-1.428
1965-80	-0.962	3.144	1.523
1970-85	-1.463	2.671	-0.245
1975-90	-4.119	4.351	-1.846

Low- and middle-income countries

	GDPgr = f (DI + Igr)		Xgr = f (DI)
Time periods	DI	Igr	DI
1961-75	0.898	4.092	-1.751
1965-80	-1.844	2.666	0.949
1970-85	-2.645	2.256	-0.281
1975-90	-4.659	4.239	-1.366

Middle- and high-income countries

	GDPgr = f (DI + Igr)		Xgr = f (DI)
Time periods	DI	Igr	DI
1961-75	-1.418	6.047	-0.281
1965-80	0.584	2.426	0.228
1970-85	0.160	3.827	-0.328
1975-90	-2.368	4.359	-1.860

Low-income countries

	GDPgr = f (DI + Igr)		Xgr = f (DI)
Time periods	DI	Igr	DI
1961-75	2.066	3.265	-1.415
1965-80	-1.948	1.953	1.450
1970-85	-3.203	1.936	-0.119
1975-90	-4.174	1.487	-0.735

Middle-income countries

	GDPgr = f (DI + Igr)		Xgr = f (DI)
Time periods	DI	Igr	DI
1961-75	-1.848	2.985	-0.237
1965-80	-1.778	2.740	0.001
1970-85	-1.874	3.154	0.138
1975-90	-2.626	3.816	-2.281

High-income countries

	GDPgr = f (DI + Igr)		Xgr = f (DI)
Time periods	DI	Igr	DI
1961-75	0.815	9.324	-0.176
1965-80	3.535	6.437	1.917
1970-85	4.448	9.312	0.857
1975-90	1.861	7.776	-1.158

Note: Figures are t-statistics. The price level data are from Summers and Heston. The rest of the data are from the World Bank Stars Database.

Significant at ten-percent level
Significant at one-percent level

countries have lower Dollar indices rather than countries that have lower Dollar indices grow faster. This makes sense given the above discussion on the determinants of the average price level. If the productivity level for nontradables increases faster than the productivity level of exportables, one might observe a high level of GDP growth and a lower price level.

In conclusion, whatever the Dollar index measures and whatever the relationship between the Dollar index and economic growth might be, it may have little to do with the trade policies that countries adopt. The Dollar index measures neither openness nor trade liberalisation. It does not even measure real exchange rate distortion.

5.7. CONCLUSION

This chapter summarised the empirical literature on the impact of international trade on economic growth. It argued that measuring openness is an immensely difficult task, and that anyone attempting to measure it must be aware of these difficulties. Some measures have theoretical weaknesses and produce misleading results. Others are theoretically more accurate, but difficult to calculate, particularly for a long period of time and across countries. They are non-comparable across countries and it is not possible to see a trend through time. Consequently, they cannot be used for time-series analysis.

Further, there is confusion over the term. The theoretical confusion over the characteristics of trade regimes are reflected in the measures of openness. Empirical works use either trade intensity or trade liberalisation as a measure of openness, even though they are not the same thing. This confusion is clear in Dollar's increasingly popular 'openness index'. Though it is an attempt to measure real exchange rate overvaluation, it is presented as a measure of trade liberalisation and openness. The fact that different measures of 'openness' are uncorrelated proves that only one of them or none of them may be a good indicator of openness.

The earlier literature interpreted the positive correlation between exports and economic growth rates as evidence of the benefits of an export-led development strategy. This view was discredited, however, since exports were a component of GDP

and a positive correlation between them was to be expected. 'Causality' sparked another important disagreement in the literature regarding the relationship between exports and GDP growth.

The empirical work in the literature overwhelmingly rejects the export-led development thesis. It provides evidence for causality running from GDP growth to export growth. The empirical work in this chapter confirms these results. Three different tests were employed to test causality and the results do not support the export-led development thesis. Causality runs from GDP growth to export growth for high-income countries. There is no causality for middle-income countries. For low-income countries, causality runs from exports to GDP growth. These results, however, cannot be interpreted as evidence for the export-led development hypothesis as low-income countries are usually import dependent and export demand constrained and thus, the benefits of export do not result from a static-efficiency gain.

Dollar's openness index was criticised in this chapter. Its theoretical weaknesses and empirical problems were presented. It was argued that its interpretation of the relationship between average price and per capita GDP is misleading. The relative average price level of a country is determined by the relative productivity levels of exportables and home goods in a complex manner but is not determined by factor availability. Thus, a country might have an average price level that is higher than what can be justified by its endowments and still have a perfectly competitive real exchange rate. Moreover, even though the Dollar index seems to be strongly correlated with GDP growth rate, it is not strongly correlated with export growth rates. This is confusing since any impact of real exchange rate overvaluation can only influence GDP performance through its impact on export performance.

As a result, it can be argued that most of the existing empirical work is irrelevant to the arguments about the relationship between openness and economic growth and does not provide persuasive evidence to support or reject the export-led development hypothesis. Consequently, the next chapter will attempt to provide an alternative measure of openness based on a structurally adjusted version of trade intensity. An alternative measure of trade liberalisation will also be introduced.

APPENDIX

Table A5.1: Country groups used in causality tests for exports and GDP growth

Low-income countries

Tanzania, Somalia, Sierra Leone, Burundi, Nepal, Malawi, Myanmar, Chad, Rwanda, Bangladesh, Guin.-Bissau, Madagascar, Zaire, Kenya, Niger, Haiti, Nigeria, India, Burkina Faso, Mali, Sudan, S.T. & Principe, Nicaragua, Gambia, Togo, Zambia, Cent Afr Rep, Benin, Ghana, Guyana, Pakistan, China, Mauritania, Zimbabwe, Honduras, Sri Lanka, Cote d'Ivoire, Egypt.

Note: Low-income economies are those in which 1993 GNP per capita was $695 or less.

Middle-income countries

Senegal, Bolivia, Cameroon, Philippines, Cape Verde, Congo, Morocco, Suriname, Guatemala, Syrian A. Rep. P. N. Guinea, Ecuador, Dom Rep, El Salvador, Colombia, Jamaica, Peru, Paraguay, Tunisia, Algeria, Thailand, Costa Rica, Indonesia, Fiji, Panama, Botswana, Venezuela, South Africa, Brazil, Turkey, Mauritius, Malaysia, Chile, Mexico, Trin & Tobago, Uruguay, Gabon, Oman, Libya, Barbados, Seychelles, Argentina, Greece, S. Korea, S. Arabia, Malta.

Note: Middle-income economies are those in which 1993 GNP per capita was between $695 and $8,625.

High-income countries

Portugal, New Zealand, Ireland, Spain, Israel, Australia, United Kingdom, Hong Kong, Finland, Italy, Canada, Singapore, Kuwait, Netherlands, Belgium, France, Austria, Germany, Sweden, US, Iceland, Norway, Denmark, Japan, Switzerland.

Note: High-income economies are those in which 1993 GNP per capita was above $8,625.

Sub Saharan Africa

Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Cote d'Ivoire, Gabon, The Gambia, Ghana, Kenya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Tanzania, Togo, Zaire, Zambia, Zimbabwe

Latin America

Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay, Venezuela.

East Asia

Bangladesh, China, Hong Kong, India, Indonesia, Japan, Republic of Korea, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand

OECD

Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.

Oil exporters

Algeria, Congo, Ecuador, Egypt, Gabon, Indonesia, Kuwait, Libya, Nigeria, Norway, Oman, Saudi Arabia, Seychelles, Syria, Trinidad and Tobago, Venezuela

Agriculture Exporters

Togo, Burundi, Malawi, Guinea-Bissau, Sudan, Rwanda, Mali, Kenya, Paraguay, Tanzania, Guatemala, Nicaragua, Burkina Faso, Chad, Honduras, Domin Rep, Somalia, Costa Rica, Madagascar, Panama.

Note: Agriculture exporters are those in which the share of agricultural exports is more than 50 percent of total exports in 1993.

Primary commodity exporters

Guyana, Burundi, Bolivia, New Zealand, Ghana, Zaire, Peru, Panama, Madagascar, Rwanda, Cape Verde, Paraguay, Chile, Honduras, P. N. Guinea, Myanmar, Tanzania, Benin, Zambia, Chad, Togo, Nicaragua, Mali, Iceland, Malawi, Niger, Mauritania, Sudan, Somalia.

Note: Primary commodity exporters are those in which the share of primary exports more than 70 percent of total exports in 1993.

Manufacture exporters

USA, Belgium, Bangladesh, Finland, United Kingdom, Portugal, Nepal, China, Haiti, Sweden, Italy, Austria, Switzerland, Israel, Germany, Hong Kong, Republic of Korea, Malta, Japan

Note: Manufacture exporters are those in which the share of manufactured exports is more than 80 percent of total exports in 1993.

Table A5.2: Countries used in regressions to test the validity and consistency of the Dollar index.

Argentina, Australia, Austria, Bangladesh, Barbados, Belgium, Benin, Botswana, Brazil, Burkina Faso, Burundi, Canada, Cape Verde, Central African Republic, Chad, Chile, Colombia, Comoros, Costa Rica, Cyprus, Denmark, Dominican Republic, El Salvador, Ethiopia, Fiji, Finland, France, Gambia, Germany, Ghana, Greece, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Iceland, India, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kenya, Republic of Korea, Lesotho, Liberia, Luxembourg, Madagascar, Malawi, Mali, Malta, Mauritania, Mauritius, Mexico, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Portugal, Puerto Rico, Reunion, Rwanda, Sierra Leone, Singapore, Somalia, South Africa, Spain, Sri Lanka, Suriname, Swaziland, Sweden, Switzerland, Tanzania, Thailand, Togo, Turkey, Uganda, United Kingdom, United States, Uruguay, Zaire, Zambia, Zimbabwe

Note: The sample excludes the oil exporting and the former socialist countries. Different numbers of countries are used for different time periods and the number of countries is determined by data availability. The countries are divided into three income groups. Each group includes roughly an equal number of countries for degree of freedom reasons. In the regressions, country dummies are included when necessary to improve the quality of the results.

CHAPTER SIX

AN ALTERNATIVE FRAMEWORK

6.1. INTRODUCTION

In the previous chapter the theoretical and technical difficulties in the existing empirical literature on openness and economic development were discussed. The theoretical difficulties are connected to a confusion of outward-orientation with trade liberalisation. This confusion derives from the basic assumptions of neoclassical economics. Once these assumptions are accepted, outward-orientation naturally involves liberal policies. If one rejects these assumptions, however, a separation of outward-orientation from trade liberalisation is necessary.

Once this separation is made, the relationship among outward-orientation, trade liberalisation and economic growth requires further elaboration. Measuring the impact of outward-orientation on economic performance is a valid exercise.[1] The same cannot be said for trade liberalisation. The only meaningful exercise would be to investigate the impact of trade liberalisation on openness, since the impact of trade liberalisation on economic performance is transmitted through its impact on openness.[2] Therefore, the questions become whether outward-orientation promotes economic growth and whether trade liberalisation promotes outward-orientation. These two questions should be answered separately. From this point of view, any attempt to regress the measures of trade liberalisation on economic growth is inappropriate. The separation of outward-orientation from trade liberalisation also requires a separation of their different measures.

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[1] For example, if one measured openness by the trade ratio, it could be argued that there are direct mechanisms via openness to economic growth.

[2] In other words, it is not possible to argue for a direct link between liberalisation and growth. If one defines liberalisation as deregulation of markets, presumably any growth enhancing effect would work through intermediate mechanisms, such as export growth.

The technical difficulties of measuring trade orientation and liberalisation are substantial and were discussed in the last chapter. As Balassa (1985: 29) points out '[t]he classification of countries into groups according to the development strategy pursued necessarily involves a certain degree of arbitrariness.' Measuring liberalisation is tremendously difficult and there are no perfect methods. Measuring outward-orientation is also more problematical than it first appears. The latter involves a separation between actual results and policy orientation. One cannot compare the trade intensity figures of different countries and determine which is more open. Structural factors should be taken into account.

In this chapter two alternative measures will be produced. The first index is a measure of trade orientation based on the structurally adjusted trade intensity (SATI) index. This index aims to separate the differences between the actual trade figures and the trade policy objectives. It will be used to test whether outward-orientation promotes economic growth. This chapter is also concerned with solving the puzzle created by the different results of the time-series and cross-country analysis regarding the impact of outward-orientation on economic growth. The second index is a measure of trade liberalisation based on an alternative measure of the effective rate of protection.

6.2. MEASURING TRADE ORIENTATION: STRUCTURALLY ADJUSTED TRADE INTENSITY (SATI)

The earlier studies, which adopted trade intensity (X/GDP) as a measure of openness, did not support the 'export-led development' hypothesis.[3] These studies, however, did not disprove the hypothesis, since they did not account for the other structural factors such as the size of the economy and the availability of natural resources. There are also theoretical considerations. For example, the 'stage of development' theory argues that development level and trade orientation are highly related. Thus, trade intensity should first be manipulated to take into account the structural characteristics of a country before it can be used as a measure of openness.

[3] See, for example, Choi (1983: 138-39).

The earlier work of Syrquin and Chenery inspire this line of research.[4] Their work draws on time-series data to examine whether the patterns emerging from cross-country comparisons of the structure and level of development actually reflect the transformations that occur over time. A number of studies adopted SATI as a measure of openness. Heitger (1987), for example, adjusts trade intensity for market size by estimating a regression between trade intensity and GDP. He takes the residuals from this regression as the trade orientation, or the openness index, and uses them in a simple growth equation in which the other components are: per capita income relative to the 'industrial leader' (the United States), as a measure of the technological gap between the countries; the adult literacy rate as a measure of human capital; the share of investment in GDP as a measure of capital formation; and, the population growth rate as a proxy for the labour force.

In this equation, the investment share and the labour force were as in the typical neoclassical case. The relative per capita initial income is assumed to capture the 'convergence' between poorer and richer countries since poorer countries were expected to grow faster than the richer ones.[5] The adult literacy rate was assumed to capture human capital, which is important for adopting imported technologies. When human capital is low, the adaptation of new technologies is assumed to be difficult.

The results of this regression indicate no correlation between economic growth and openness. Therefore, Heitger (1987) argues that since openness and investment rates (the investment rate was significant in the regression) were strongly correlated,[6] 'the contribution of a high export share [is] insignificant only due to multicollinearity'. He concludes that 'a high export share favoured capital accumulation and this in turn promoted economic growth.'[7] This explanation is unsatisfactory, since a positive correlation between the two variables does not

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[4] See, for example, Syrquin and Chenery (1989).

[5] The justification for this expectation is as follows: '[T]he technological progress of a country – if it is not the technological leader – is merely a function of technological adaptation possibilities, since technological progress is not only achieved by domestic discovery and application, but to a large extent by transfer from abroad. Thus, because the production of technological knowledge is more costly than its imitation and duplication, the lesser-developed country is in a more favourable position than the producers of technological knowledge.' (Heitger, 1987: 252)

[6] He estimated a regression between investment and openness and found them to be positively correlated.

[7] Heitger (1987: 255).

establish causality. Causality may run from investment to openness through economic growth.

Balassa (1985) also adopts the SATI model in a more complex manner. He uses the deviation of actual from hypothetical per capita exports as a measure of trade orientation. The hypothetical values are derived from a regression that includes per capita income, population and the ratio of mineral exports to GDP where the independent variable is per capita exports. The residuals from this regression are interpreted as the trade orientation index and are used in another equation as one of the independent variables where the economic growth rate is the independent variable. Other independent variables are assumed to capture other factors such as external shocks,[8] the level of economic development,[9] and the extent of reliance on manufactured exports.[10]

In this section, a similar approach will be employed, since this method allows one to 'separate the effects of the country's initial policy stance from those of policy responses to external shocks.'[11] Unlike the other approaches, if properly formulated, this approach enables one to isolate the other factors that may influence trade intensity and to determine whether an open economy, as a result of conscious policy, promotes faster economic growth. If the other factors that influence trade intensity can be identified and controlled in this regression, the residuals can be assumed to measure policy. Trade intensity is only one of a number of other factors that can influence the economic performance of a country. Thus, the other policy variables (such as the investment level), as well as external shocks (such as external demand shocks, the impact of oil shocks, debt problems), must also be controlled.

Initially, an accurate measure of trade intensity must be constructed. This can be done by modifying the actual trade intensity measure by other structural characteristics of the economy such as the size of the manufacturing sector, the size of the economy, and the availability of natural resources. When this is done, the residuals

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[8] These variables were: EP/ES, IS/ES, ANEF/ES, ES/Y where ES is the balance of payments effects of external shocks, EP is the balance of payments effects of export-promotion, IS is the balance of payments effects of import-substitution, ANEF is the balance of payments effects of additional net external financing, and Y is gross national product. See Balassa (1985: 29-30) for further details.

[9] Per capita GNP.

[10] Share of manufactured commodity exports in total exports.

[11] Balassa (1985: 29-32).

from the regression can be used as the openness index, for they will indicate whether a country is trading more (or less) than predicted, given its structural characteristics. Then, this index can be used in a regression as an independent variable (with GDP growth as the independent variable) to determine whether or not outward-orientation stimulates economic growth. The other variables include policy variables, as well as ones that are assumed to capture the external shocks.

Step 1:

Trade intensity will be modified according to the structural characteristics of the countries by estimating the following regression. The residuals will be used as the modified 'trade intensity' or SATI index.[12]

(X/GDP) = f (Manufacture + Oil + GNPpc + Population)

Table 6.1: Trade intensity as a function of the manufacturing sector, oil and mineral trade, per capita GNP and population (five-year average, 1987-91)

Constant	Manufacture	Oil	GNPpc	Population	R-Bar-Sq	DW	DF	F-test
0.649	0.533	0.403	0.054	-0.124	0.705	1.807	79	19.166
(2.431)	(4.987)	(8.498)	(1.843)	(-4.907)				

significant at one-percent level
significant at ten-percent level

Notes: Dependent variable is trade intensity. Variables are in logarithmic form. Figures in parentheses are t-statistics. Ninety-two countries are included (see table A6.1). Country dummies for: Burkina Faso, Hong Kong, Iran, Ireland, Mauritania, Panama, Papua New Guinea, Seychelles.
Source: World Bank Stars Database

where

Manufacture: This is the share of manufacturing value-added in total national value-added. This variable measures the structural change in an economy according to the 'stage of development' theory. That theory argues that a country's ability to export depends on its ability to produce commodities which are internationally competitive.

Thus, one might expect a strong economy with a strong manufacturing sector to be relatively more open. Before the share of manufacturing in total value-added was selected as a variable in this regression, separate regressions were estimated for the share of agriculture and services in total value-added. They were negatively correlated with trade intensity, indicating that low-income agricultural commodity producers and high-income countries[13] tend to have a lower trade intensity. However, these variables were omitted because their coefficients were insignificant. A number of other alternatives, such as the share of primary exports and manufacturing exports in total exports, were also tested and omitted since they did not improve the explanatory power of the regression.

Oil: This denotes the ratio of oil and mineral trade (exports and imports) to total GDP. It can be argued that for large producers of raw materials such as oil and minerals, a certain degree of trade is not a policy option but an inevitability. The same is true for raw material importing countries. For a country that is just self-sufficient in terms of raw materials, trade is more of a policy option.

GNPpc: Per capita gross national product is another measure of structural change and is very closely correlated with the share of manufacturing in total value-added. Nevertheless, it measures something different and has two contradictory effects on openness. It first measures competitiveness as in the 'stage of development' theory and might have a positive impact on the level of openness. On the other hand, it is also a measure of market size. High-income countries have bigger domestic markets and combined with the next variable (population) might have a negative impact on openness.

Population: This is used as a measure of market size. As argued in chapter four, market size is important for economies of scale. Countries that have larger domestic markets tend to be more closed, because companies in large domestic markets can make use of scale economies and grow rapidly. Companies in small countries,

[12] Some researchers (such as Dollar, 1991) included population density as a measure of factor intensity, but since it is proven to be insignificant it was excluded from our regression.

however, need external markets to grow larger. Thus the larger a country is, the smaller will be its share of exports in total GDP.

Step Two:

The residuals from the first regression will be used as an openness index because they reflect the relative openness of countries given their structural characteristics. The openness index, as one of many other factors that might have an influence on economic growth, will be included in a regression with the other variables. A number of variables might have an influence on economic growth. They can be divided into the following categories:[14]

Orthodox instruments are: the real exchange rate, the average inflation rate and the real interest rate. *Heterodox* instruments are: export subsidies, the average effective rate of protection and the share of public investment in GDP. *New growth theory* variables are: the initial level of GNP per capita, the investment rate, export growth and the change in literacy rate. The list can be increased to capture external shocks such as a sharp fall in exports demand or the terms of trade; an input price shock such as the oil shocks of 1974 and 1979, the debt crisis of the 1980s, etc. All of the above variables might be important to some extent as determinants of economic performance. However, this thesis is interested in the impact of trade openness on economic performance and is not concerned with the details of the specific impact of the above variables. In other words, it is not the aim of this thesis to prove the importance of the above variables for economic development. They will be included in the regression to obtain a more accurate picture of the impact of trade openness. Thus, in the following regression, the most important variables (growth rates of investment and exports, which also indirectly capture the impact of some other variables) will be included alongside the measure of trade openness. A second regression will also be estimated to include other variables that are not in the first regression.

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[13] Where the share of services is relatively higher.

[14] See Mosley, Subasat and Weeks (1995: 1468).

$$GDPgr = f(OI + Xgr + Igr)$$

where

GDPgr : Gross domestic product, annual average growth rate

OI : Openness index

Xgr : Exports, annual average growth rate

Igr : Investment, annual average growth rate

In this regression, the export growth rate is assumed to capture the external shocks to the economy. A sudden external demand shock or a gradual decline in export demand will have a negative impact on the economy. The inclusion of exports with the openness index will allow us to see the impact of trade policy independently of the external shocks. So far, no one has included a measure of openness alongside the growth rate of exports.[15]

The investment growth rate is assumed to capture the impact of all the internal policy variables,[16] external shocks,[17] and duties and official transfer receipts of the countries.[18] As alternative indicators, the share of investment in GDP (I/GDP) and the investment growth rate modified with the share of investment in GDP (Igr * [I/GDP]) are also introduced into the regression but the investment growth rate is proven to be more significant and improves the quality of the regression. It is usually argued that the share of investment in the GDP is a more appropriate indicator[19] because of demand and capacity utilisation considerations. This is so because investment growth rates are more volatile compared to the rate of capital growth. In this regression, however, ten-year averages of all variables are used which satisfy such considerations. Moreover, I/GDP might be a more problematical indicator than is recognised in the

[15] An alternative way to separate the impact of external shocks from trade policy is to include export growth rates in the first regression (since trade intensity is correlated with external demand conditions) rather than in the second one. Both regressions give similar results.

[16] Such as the level of the real interest rate, inflation rate and other variables which may have an impact on investment.

[17] Such as an import price increase for inputs, oil shocks of 1974 and 1979, etc. which may reduce the investable funds.

[18] Such as debt repayments and external net resource transfers (i.e. aid).

[19] See Ukpolo (1994: 446).

literature as both components of the I/GDP ratio are strongly correlated. For example, if a sharp fall in the investment rate is associated with a sharp fall in GDP growth, the I/GDP ratio may stay fairly high. If the fall in GDP growth is higher than the fall in investment, one might observe a shrinking economy with an increasing I/GDP rate. Table 6.6 provides evidence for this argument. World economic and investment growth rates declined from the 1985-89 period to the 1990-93 period. But since the decline in investment growth rates was larger (from 4.8 percent to 1.0 percent) than the decline in GDP growth rates (from 3.5 percent to 2.0 percent), the share of investment in GDP increased from 22.0 percent to 22.5 percent. Though there is a clear positive correlation between investment growth and GDP growth, there is a negative correlation between I/GDP and GDP growth.

In the second regression, other variables that are not captured by the above variables will be included:

GDPgr = f (OI + Xgr + Igr + GNPpc1983 + Government + Unrest + Population + Enrolment)

where

GNPpc1983: This is the initial level of per capita GNP in 1983 which is included to see whether there is convergence between developed and developing countries.

Government: This denotes the real government share of GDP.

Unrest: The recent literature puts emphasis on social peace as one of the most important factors for development. Country dummies are included for countries that had social unrest during the period.[20]

Population: In typical neoclassical regressions, the population growth rate is included as a rough measure of the labour force, the other component of the production function along with capital. In many studies, however, it has proven to be insignificant

[20] See Sachs and Warner (1996) for further details.

and even negatively correlated with economic growth rates. It will nevertheless be included first, in order to be consistent with the existing literature, and second, it may indeed be negatively correlated with economic growth since rapid population growth may reduce the level of investable net resources.

Enrolment: The primary school enrolment rate is used as a measure of human capital. This measure is preferred to other possible candidates such as the secondary enrolment rate and the adult literacy rate for purely a degree-of-freedom consideration.

These two regressions will be estimated first for all countries. The same regressions will also be estimated for the following different country groups: low-income countries, middle-income countries, high-income countries, low- and middle-income countries, middle- and high-income countries, low- and high-income countries, Latin American countries and Sub-Saharan African countries.[21]

Empirical results

The calculations produce some interesting results. First of all, the classification of countries according to their 'openness' based on the SATI method shows differences from the classification of the *World Development Report* (1987). As can be seen from table 6.2, countries that are classified as strongly inward, such as Nigeria, Tanzania, Ghana and Bangladesh, or moderately inward-oriented, such as Sri Lanka and Cote d'Ivoire, in the *World Development Report* are much more open according to the SATI. On the other hand, countries such as Brazil, Chile, El Salvador, Turkey, Tunisia and Uruguay that are classified as moderately open in the *World Development Report* do not appear to be so in this classification. More interestingly, Japan and the United States are two of the strongly inward-oriented countries. Table 6.3 presents full rank of countries according to the *World Development Report* (1987) and the SATI.

Secondly, the regression results, which are reported in tables 6.4 and 6.5, suggest that openness is only significant for the middle-income countries. In the first

[21] See table A6.1 for the classification of countries.

regression it is significant at the ten-percent level and in the second regression it is significant at the one-percent level. For the low- and high-income countries, however, openness does not have any significant impact on economic growth. As expected, investment and exports are significant at the one-percent level. An interpretation of the results for the other variables is beyond the scope of this chapter. What is important for the purposes of this chapter is the fact that in both regressions, the results for the openness index are consistent. The above analysis provides evidence to suggest that relatively more open middle-income economies grow faster than relatively closed middle-income economies. Given their structural peculiarities, middle-income countries that prefer to trade more will grow faster than countries that prefer to trade less.

Table 6.2: Rank order of countries according to 'openness' level: a comparison of the *World Development Report* (1987) and the SATI.

	WDR rank	SATI rank	WDR rank – SATI rank
Hong Kong	1	1	0
South Korea	2	8	-6
Singapore	3	2	1
Brazil	4	31	-27
Chile	5	22	-17
Thailand	6	6	0
Tunisia	7	21	-14
Turkey	8	25	-17
Uruguay	9	19	-10
Cameroon	10	23	-13
Colombia	11	17	-6
Costa Rica	12	5	7
Cote d'Ivoire	13	3	10
El Salvador	14	28	-14
Honduras	15	10	5
Indonesia	16	12	4
Kenya	17	18	-1
Mexico	18	13	5
Nicaragua	19	32	-13
Pakistan	20	15	5
Philippines	21	16	5
Senegal	22	24	-2
Sri Lanka	23	7	16
Argentina	24	27	3
Bangladesh	25	14	11
Bolivia	26	34	-8
Burundi	27	20	7
Domin. Rep.	28	29	-1
Ghana	29	11	18
India	30	30	0
Nigeria	31	4	27
Sudan	32	26	6
Tanzania	33	9	24
Zambia	34	33	1

Table 6.3: Classification of countries according to *World Development Report* (1987) and SATI

World Development Report (1987) classification

Strongly outward oriented	Moderately outward oriented	Moderately inward oriented	Strongly inward oriented
Hong Kong	Brazil	Cameroon	Argentina
South Korea	Chile	Colombia	Bangladesh
Singapore	Thailand	Costa Rica	Bolivia
	Tunisia	Cote d'Ivoire	Burundi
	Turkey	El Salvador	Dominican Republic
	Uruguay	Honduras	Ghana
		Indonesia	India
		Kenya	Nigeria
		Mexico	Sudan
		Nicaragua	Tanzania
		Pakistan	Zambia
		Philippines	
		Senegal	
		Sri Lanka	

SATI classification

Strongly outward oriented	Moderately outward oriented	Moderately inward oriented	Strongly inward oriented
Hong Kong	Nigeria	Honduras	Senegal
Singapore	Costa Rica	Ghana	Turkey
Cote d'Ivoire	Thailand	Indonesia	Sudan
	Sri Lanka	Mexico	Argentina
	South Korea	Bangladesh	El Salvador
	Tanzania	Pakistan	Dominican Rep.
		Philippines	India
		Colombia	Brazil
		Kenya	Nicaragua
		Uruguay	Zambia
		Burundi	Bolivia
		Tunisia	
		Chile	
		Cameroon	

SATI classification (all sample)

Strongly outward oriented	Moderately outward oriented	Moderately inward oriented	Strongly inward oriented
Chad	South Africa	Colombia	Argentina
Hong Kong	Canada	Kenya	El Salvador
Ireland	Honduras	Uruguay	Australia
Central Afr. Rep.	Ghana	Mali	Spain
Singapore	Benin	Burundi	Dominican Rep.
Malawi	Sweden	Togo	India
Cote d'Ivoire	Congo	Tunisia	Haiti
Guyana	Indonesia	Norway	Brazil
Mauritius	Gambia	Chile	United States
China	France	Ecuador	Nicaragua
Netherlands	Austria	Niger	Jordan
Nigeria	Mexico	Jamaica	Zambia
Papua New Guinea	Uganda	Iceland	Bolivia
Mauritania	New Zealand	Venezuela	Cyprus
Germany	Zimbabwe	Finland	Guinea-Bissau
Costa Rica	Bangladesh	Trinidad & Tobago	Japan
Switzerland	Sierra Leone	Cameroon	Greece
Thailand	United Kingdom	Morocco	Rwanda
Sri Lanka	Pakistan	Senegal	Iran
South Korea	Italy	Paraguay	Egypt
Denmark	Philippines	Algeria	Burkina faso
Malta	Gabon	Turkey	Panama
Tanzania	Portugal	Sudan	Seychelles

Table 6.4: GDP growth as a function of openness, export growth and investment growth (ten-year average, 1984-93)

	All	LIC	MIC	HIC	LIC + MIC	MIC + HIC	LIC + HIC	LA	SSA
Constant	0.095 (0.102)	0.342 (0.204)	-1.709 (-1.020)	0.758 (1.853)	-0.260 (-0.215)	0.065 (0.069)	0.413 (0.397)	-1.767 (-0.769)	0.976 (0.827)
Openness index	0.658 (2.085)	0.586 (1.040)	1.465 (2.156)	0.012 (0.036)	0.812 (1.936)	0.717 (1.823)	0.579 (1.560)	1.514 (1.596)	0.529 (1.311)
Export growth	0.211 (5.563)	0.235 (3.699)	0.194 (2.898)	0.403 (3.024)	0.209 (4.675)	0.217 (3.956)	0.235 (4.717)	0.077 (1.116)	0.106 (2.007)
Investment growth	0.121 (6.052)	0.085 (2.974)	0.089 (3.943)	0.123 (1.861)	0.097 (4.843)	0.088 (4.493)	0.066 (3.331)	0.177 (4.010)	0.060 (3.879)
R-Bar-Sq	0.529	0.541	0.414	0.469	0.497	0.408	0.530	0.646	0.454
DW	1.967	2.292	1.620	1.389	1.743	1.770	2.170	1.580	2.654
DF	88	29	32	19	65	55	51	16	25
F-test	35.143	13.588	9.273	7.491	23.467	14.367	21.328	12.590	8.762

significant at one-percent level significant at ten-percent level

Notes: Dependent variable is GDP growth. Variables are in logarithmic form. Figures in parentheses are t-statistics. Ninety-two countries are included (see table A6.1). LIC: Low-income countries, MIC: middle-income countries, HIC: high-income countries, LA: Latin America, SSA: Sub-Saharan Africa
Source: World Bank Stars Database

Table 6.5: GDP growth as a function of openness, export growth, investment growth, initial level of GNP per capita (1983), government share in GDP, social unrest, population, primary enrolment and political system (ten-year average, 1984-93)

	All	LIC	MIC	HIC	LIC & MIC	MIC & HIC	LIC & HIC	LA	SSA
Constant	1.654 (1.309)	0.633 (0.306)	-0.931 (-0.454)	7.283 (2.051)	1.023 (0.617)	2.114 (1.597)	1.261 (0.937)	2.352 (0.700)	2.101 (0.858)
Openness Index	0.623 (1.907)	0.512 (0.932)	2.076 (3.049)	0.153 (0.475)	0.915 (1.959)	0.804 (2.343)	0.337 (0.979)	1.051 (0.913)	0.777 (1.365)
Export Growth	0.175 (4.638)	0.227 (3.599)	0.056 (1.164)	0.180 (1.143)	0.176 (3.970)	0.073 (1.994)	0.229 (4.856)	0.060 (0.824)	0.097 (1.229)
Investment Growth	0.122 (6.004)	0.065 (2.766)	0.218 (6.374)	0.082 (1.227)	0.096 (4.653)	0.198 (7.302)	0.068 (3.617)	0.184 (3.864)	0.079 (2.689)
GNPpc (1983)	-0.020 (-2.482)	-0.012 (-0.351)	-0.024 (-0.670)	-0.251 (-2.347)	-0.016 (-1.077)	-0.061 (-2.816)	-0.010 (-0.939)	-0.068 (-1.064)	-0.012 (-0.391)
Govern-ment	-0.143 (-3.154)	-0.123 (-1.354)	-0.154 (-1.305)	-0.185 (-1.046)	-0.133 (-2.189)	-0.212 (-2.396)	-0.141 (-2.385)	-0.310 (-2.331)	-0.032 (-0.244)
Unrest	-0.017 (-1.063)	-0.009 (-0.324)	-0.007 (-0.135)	NA	-0.015 (-0.718)	-0.056 (-1.130)	-0.012 (-0.521)	-0.015 (-0.252)	-0.002 (-0.074)
Population	-0.213 (-1.207)	0.179 (0.471)	-0.219 (-0.879)	0.717 (1.682)	-0.270 (-1.171)	-0.190 (-1.040)	0.151 (0.628)	-0.105 (-0.234)	-0.551 (-1.007)
Primary enrolment	-0.001 (-0.062)	-0.001 (-0.002)	-0.094 (-0.584)	-0.945 (-1.492)	-0.013 (-0.314)	-0.095 (-0.673)	0.001 (0.044)	-0.232 (-0.675)	0.009 (0.165)
Socialist	0.083 (1.864)	0.120 (1.954)	NA	NA	0.093 (1.648)	NA	0.115 (2.373)	NA	0.047 (0.661)
R-Bar-Sq	0.594	0.581	0.694	0.549	0.556	0.632	0.614	0.646	0.317
DW	2.247	2.360	2.601	1.953	2.292	2.158	2.182	2.313	2.088
DF	78	22	24	15	55	47	45	11	19
F-test	15.172	5.786	10.097	4.838	9.937	12.833	10.570	8.351	2.444

significant at one-percent level significant at ten-percent level

Notes: Dependent variable is GDP growth. Variables are in logarithmic form. Figures in parentheses are t-statistics. Eighty-eighth countries are included. LIC: Low-income countries, MIC: middle-income countries, HIC: high-income countries, LA: Latin America, SSA: Sub-Saharan Africa
Source: World Bank Stars Database except the unrest variable which is taken from Sachs and Warner (1996)

Does this result confirm the alleged superiority of the export-led development strategy? Can all countries grow faster if they trade more? The answer to both questions is no. First of all, the results shed doubt on the overall validity of the export-led development hypothesis for low- and high-income countries. Secondly, even though more open middle-income countries grow faster, this does not necessarily mean that if all middle-income countries increased their openness they would all grow faster. It is important to note that this is a relative openness index; it shows the openness of the countries in comparison to one another.[22] The position of a country is not only determined by its own policies but also by the policies of the others. If all other countries become more open, a country with the same policies will become less open. Thus, the results do not necessarily mean that all countries grow faster when they are more open.

Considering table 6.6, it can be observed that from the 1960s to the 1990s GDP growth rates for middle- and high-income countries declined, while their openness in terms of trade intensity increased substantially. The openness of low-income countries declined sharply from 22.5 percent in 1965 to 12.0 percent in 1982 and then increased slightly to 13.7 percent in 1993. Even though growth rates depend largely on changes in investment rates, this fall in trade must have had adverse effects on these countries. During the 1980s, they have increased their export levels. Economic performance, however, has not been particularly impressive, and followed a close fit with weak investment rates.

The openness of middle-income countries fluctuated around 13 percent from 1960 to 1973, and after the oil shock declined to about 10 percent in 1975. Subsequently, however, it increased dramatically to 25.1 percent in 1993. GDP growth rates declined from an average of seven percent in the 1970-74 period to 2.6 percent in the 1980-84 period and then picked up slightly to 3.6 percent in 1990-93.

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[22] This is a relative index because it is calculated by adjusting the trade intensity (which is an absolute indicator) by the structural characteristics of the countries. A regression was estimated between the trade intensity and four independent variables and openness was measured as deviation from the regression line. If the level of trade intensity could be explained perfectly by the independent variables, the residuals would be zero and all countries would be at the same level of openness. A positive (negative) residual means a country is more (less) open than expected as a result of conscious policy. Thus, openness index (residuals) does not give any information about a country's absolute level of openness but it gives information about its relative level of openness compared to the others given its structural characteristics.

The impact of the oil shocks of the 1970s obviously played an important part in this process.

Table 6.6: Investment ratio, export ratio, GDP growth, investment growth and export growth, by income group.

World					
	I/GDP	X/GDP	GDPgr	Igr	Xgr
1961-64	22.0	8.2	5.3	7.1	7.2
1965-69	23.2	9.1	5.2	6.3	8.2
1970-74	24.4	11.1	4.1	4.5	8.3
1975-79	22.8	12.3	3.3	2.5	5.2
1980-84	21.5	13.3	2.1	0.7	3.5
1985-89	22.0	14.3	3.5	4.8	5.4
1990-93	22.5	16.0	2.0	1.0	4.2
1961-93 Average	22.7	12.0	3.6	3.8	6.0

Low-income (Excluding China + India)				
I/GDP	X/GDP	GDPgr	Igr	Xgr
NA	NA	NA	NA	NA
18.6	19.5	4.0	3.3	-0.6
19.1	17.5	3.9	7.4	-0.2
19.2	14.0	3.5	1.5	1.7
18.5	12.6	2.8	0.3	0.9
16.9	13.1	3.4	4.1	4.1
16.6	13.5	2.7	2.7	4.4
18.2	14.9	3.4	3.2	1.7

Middle-income				
	I/GDP	X/GDP	GDPgr	Igr	Xgr
1961-64	21.3	12.9	5.2	6.1	4.4
1965-69	23.3	12.1	6.1	9.1	5.1
1970-74	26.3	12.1	7.0	9.6	6.3
1975-79	27.4	12.7	5.3	4.3	10.3
1980-84	25.2	14.9	2.6	-1.2	6.0
1985-89	22.4	18.6	3.8	4.9	8.7
1990-93	25.1	22.6	3.6	6.0	8.6
1961-93 Average	24.5	15.0	4.8	5.5	7.1

High-income				
I/GDP	X/GDP	GDPgr	Igr	Xgr
22.1	7.2	5.4	7.3	7.5
23.3	8.3	5.2	6.2	9.2
24.3	10.5	3.9	3.9	9.2
22.1	12.1	3.1	2.3	5.0
20.9	13.2	2.0	0.9	3.6
21.8	14.1	3.4	5.0	5.1
22.3	15.5	1.8	0.6	3.4
22.4	11.5	3.5	3.7	6.2

Notes: Low-, middle- and high-income countries exclude oil exporters. Low-income countries exclude China and India. See table A6.1 for details of the classification of the countries. All value data is in constant dollar terms.
Source: World Bank Stars Database.

Table 6.7 shows that developing countries in general increased their trade more with industrial countries than among themselves. The declining trade intensity of low-income countries indicates that middle-income countries must be trading more with high-income countries. This export penetration of some middle-income countries into the markets of high-income countries would have a positive impact on the former's economic performance.

Finally, the openness of high-income countries has increased continuously from seven percent in 1960 to 15.7 percent in 1993. Except during 1985-89 when there was a sharp increase in investment, GDP growth rates have declined steadily.

Although there was a clear decline in export growth rates, total exports have grown faster than investment and GDP. As a result, trade intensity increased year by year. Figures for the high-income countries are very close to world figures, as they produce almost 80 percent of the world's total production.

Table 6.7: Exports from developing countries and exports from industrial countries, by region (percent)

	Exports from developing countries		Exports from industrial countries	
	to industrial countries (%)	to developing countries (%)	to industrial countries (%)	to developing countries (%)
1975	67.5	26.3	61.3	27.0
1980	67.5	27.3	56.9	30.1
1985	72.7	24.1	61.0	29.9
1990	76.3	23.0	61.0	35.8

Source: IMF, *Direction of Trade Statistics Yearbook.*

The figures in table 6.6 suggest that if there is any correlation between openness and GDP growth rates, it must be a negative one, since declining GDP growth rates are associated with increasing openness. Whatever miracle openness is supposed to perform, it has not worked. On the contrary, there seems to be a very close fit between investment growth rates and GDP growth rates. The above arguments can also be tested statistically. Using the available data summarised in table 6.6, the following time-series regression were estimated, in which GDP growth is a function of trade intensity, investment growth,[23] and export growth, for low-, middle- and high-income countries:

$$GDPgr = f(X/GDP + Xgr + Igr)$$

where

GDPgr : GDP growth rate

[23] A number of other regressions were estimated using different variables such as the share of investment in GDP. But the above regressions proved to be more appropriate. Two-year lags of the variables were also introduced into the regression but did not improve the quality of the regression and thus were eliminated.

X/GDP : Trade intensity

Xgr : Export growth rate

Igr : Investment growth rate

The results of the regression (reported in table 6.8) support the above arguments. For all groups the investment growth rate is significant at the one-percent level.[24] The export growth rate is only significant for the middle-income countries. The trade intensity has a negative and significant sign for the middle- and high-income countries and an insignificant positive sign for the low-income countries.

Table 6.8: GDP growth as a function of trade intensity, export growth and investment growth.

	Low-income countries (1965-93)	Middle-income countries (1960-93)	High-income countries (1960-93)
Constant	2.358 (5.071)	3.580 (15.767)	2.981 (17.513)
Trade intensity (X/GDP)	0.109 (0.815)	-0.448 (-6.380)	-0.308 (-7.991)
Export growth	-0.027 (-1.246)	0.106 (4.019)	0.025 (0.761)
Investment growth	0.081 (3.401)	0.152 (9.546)	0.279 (12.133)
Year dummies		1974 and 1981	1975
R-Bar-Sq	0.347	0.835	0.957
DW	1.658	1.870	2.063
DF	24	27	28
F-test	5.797	33.525	180.740

Note: Shaded areas are significant at the one-percent level. Low-, middle- and high-income countries exclude oil exporters. Low-income countries exclude China and India. Dependent variable is GDP growth. Variables are in logarithmic form. Figures in parentheses are t-statistics.
Source: World Bank Stars Database.

The empirical work presented does not favour the export-led development hypothesis. The results lead to the conclusion that there may be fallacies of composition. The cross-country analysis suggests that the more open middle-income countries do grow faster than the more closed countries. The time-series analysis, on the contrary, suggests that they do not grow faster when they increase their overall openness. These results have a clear message. Relying on export growth as an engine of growth is not a realistic option for reversing a decline in GDP. The strong correlation between

[24] Allthough the significance level declines from high-income to low-income countries.

investment and economic growth suggests that investment rates are the main determinant of economic growth, and that 'investment-led development' is the real alternative needed to reverse this trend. Nevertheless, one should not go so far as to suggest that declining growth rates result from trade openness. It is more likely that increased openness is an unsuccessful response to declining GDP growth, rather than the cause of it. It is certain, on the other hand, that increased openness has not been successful in counteracting this tendency.

6.3. TRADE LIBERALISATION INDEX

As argued earlier, measuring trade liberalisation is a difficult task and existing measures have serious problems. This section develops an alternative measure of trade liberalisation based on a modified version of the effective rate of protection. This method is theoretically more accurate and easier to calculate. It can be developed in various ways and provides scope for further research. This section will provide the foundations of the method.

The effective rate of protection

The comparison of domestic value-added with 'free trade' value-added is a common way to measure trade liberalisation. Total value-added is calculated with domestic and international prices, and the difference between them is interpreted as a measure of trade protectionism. It is argued that when free trade is allowed, domestic value-added will be equal to the free trade value-added and that any deviation from this equilibrium should be interpreted as an indicator of protectionism. The reasoning is that protective measures allow domestic companies to increase their value-added above the free trade value-added. This measure is called the 'effective rate of protection'. Alavi defines it as 'the percentage excess of domestic value-added, obtainable by reason of the imposition of tariffs and other protective measures on the product and its inputs, over the foreign or the free trade value-added.'[25]

[25] Alavi (1996: 67).

The formula for the effective rate of protection is:

$ERP = ((VA^d - VA^{FT}) / VA^{FT})*100$ or $ERP = T / (1 - \alpha)$[26]

where

ERP : Effective rate of protection

VA^d : Domestic value-added with a tariff or other protective measures on imports

VA^{FT} : Free trade value-added

T : Nominal tariff rate

α : Input-output coefficient or productivity (= total input / total output)

Domestic and free trade value-added are calculated as

$VA^d = P (1 + T - \alpha)$ and $VA^{FT} = P (1 - \alpha)$

When $T = 0$, $VA^d = VA^{FT}$

In view of this formula, the measurement of trade liberalisation is straightforward. Whenever domestic value-added exceeds free market value-added (a positive effective rate of protection), some form of protection exists. For this conclusion to hold a number of assumptions must be made. Alavi (1996: 66) lists these assumptions:

> 1. A state of perfect competition prevails where the economy is in full employment, balance of payment equilibrium is maintained and no domestic distortions other than those due to government interference exist. These assumptions ensure the uniformity of factor prices in the economy. Hence, they ensure that a tendency for factor prices to rise in any activity will attract factors of production into it.

[26] If there is a tariff rate for imported inputs, the formula would be: $ERP = T - \alpha*Ti / 1 - \alpha$, where Ti is the nominal tariff rate on imported inputs.

2. Fixed input-output coefficients - i.e. input-output coefficients remain unchanged after tariff imposition. Fixing input-output coefficients implies that the imposition of protection would not induce producers to reduce or increase the amount of any one input used per unit of output. Thus, the input-output coefficients observed under actual policies would be equal to those under free trade, and the physical ratios of each of the inputs are assumed not to vary when the protection structure changes.

3. Small country assumption - i.e. it faces an infinitely elastic world demand for its exports and world supply for its imports. This implies that the country concerned faces given prices of its exports and imports (the terms of trade being exogenous).

4. The level of trade is not affected by the imposition of tariffs and other taxes and subsidies, so that the internal price of each importable is given by the foreign price plus the tariff.

The effective rate of protection remains one of the most accurate measures of trade liberalisation despite its broad assumptions. The calculation of the effective rate of protection, on the other hand, is extremely difficult and time consuming. Existing studies are limited and insufficient for time-series analysis, because the effective rate of protection is generally calculated for only one or two years. It is also unsuitable for cross-country analysis as most studies cover different time periods, and thus they are incomparable. Moreover, most of the calculations appear to be unreliable because different studies that cover the same countries and the same years usually produce different results. In this section, an alternative measure of the effective rate of protection (or the price distortion) index will be developed. This index is calculated for individual sectors in the economy (such as textiles, iron/steel), and based on a comparison of the change in value-added in different countries after accounting for the change in their productivity and cost levels. From a non-orthodox point of view, one would expect value-added to be positively correlated with productivity and negatively correlated with cost. Thus, the equation would be:

VA/L = f (Productivity, Adjusted Cost/L)

where

VA/L	: value-added per worker
Productivity	: Labour productivity[27]
Adjusted Cost/L	: Adjusted non-wage cost per worker

The non-wage cost must be adjusted since an increase in cost might come from two sources: an increase in inputs (such as investment in new machinery which increases productivity) and an increase in input prices. An increase in inputs would increase per capita value-added whereas an increase in input prices would reduce it. As we are only interested in the cost of inputs (because the first independent variable in the regression accounts for an increase in inputs), the non-wage per worker cost should be adjusted in such a way that it only reflects a change in the prices of inputs. This can be done by estimating a regression between non-wage per worker cost and productivity, and saving the residuals as the adjusted non-wage cost index. The residuals would reflect an increase in cost beyond any productivity increase. In other words, they would reflect an increase in input prices.

The residuals from the former regression can be interpreted as a price distortion index. If all countries adopt complete free trade policies,[28] all variations in the value-added would be perfectly explained by the variations in productivity and cost, and the residuals would be zero. Thus, the positive residuals can be interpreted as representing protection while negative residuals can be interpreted as 'negative-protection'. Before the effective rates of protection for two industrial sectors (textiles and iron/steel) are calculated by using this alternative method, the theoretical foundations of the method and its potential problems will be discussed.

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[27] Labour productivity is used as a measure of productivity rather than total factor productivity as the latter has theoretical weaknesses. See ul-Haque *et al.* (1995: 24-27) for a good critique of total factor productivity.

Theoretical foundation

This section provides a theoretical justification for the model proposed above. A simple Sraffian model will be used to provide an understanding of the relationship between productivity, cost and value-added. In a typical Sraffian model there is one input (capital good - K) and one output (consumption good - C). The model can be specified as follows:

1. $P_K \cdot K_K + W \cdot L_K + r (P_K \cdot K_K) = P_K$ (capital good)
2. $P_K \cdot K_C + W \cdot L_C + r (P_K \cdot K_C) = P_C$ (consumption good)

where:

$P_{K,C}$: Prices of the commodities.
$L_{K,C}$: Labour input required to produce one unit of each commodity.
$K_{K,C}$: Capital input required to produce one unit of each commodity.
W : Wage measured in units of output and paid at the end of the production period.
r : Rate of return (interest rate).

The above Sraffian model will be modified in the following manner:

1. In this model there are two commodities: one exportable good (X) and one home good (H) which are produced by employing labour (L) and capital (K). There are also two countries: Portugal (P) and England (E).

2. Both countries are assumed to import the capital good (K). Thus the price of capital is externally given to both countries. For the sake of simplicity, the capital input requirements are assumed to be the same for both commodities in both countries; $K_{XE} = K_{HE} = K_{XP} = K_{HP}$. This means that the capital cost for all commodities is the same and can be denoted as K.

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[28] Ignoring other factors that might have influence on the level of value-added such as improvements

3. The productivity level for the home good (H) is assumed to be the same in both countries.

4. The wages and profit rates within the countries for both sectors may not necessarily be equal at all times, but it is assumed that the differences cannot be extreme and persistent. There is a tendency for them to converge in the long-run.

First, the pre-trade production structure of the countries will be investigated.

ENGLAND

1. $P_K \cdot K_{XE} + W_{XE} \cdot L_{XE} + r_{XE} (P_K \cdot K_{XE}) = P_{XE}$ (Export good)
2. $P_K \cdot K_{HE} + W_{HE} \cdot L_{HE} + r_{HE} (P_K \cdot K_{HE}) = P_{HE}$ (Home good)

Because of assumption 2 on capital goods, equations 1 and 2 can be written as:

3. $K + W_{XE} \cdot L_{XE} + r_{XE} \cdot K = P_{XE}$ (Export good)
4. $K + W_{HE} \cdot L_{HE} + r_{HE} \cdot K = P_{HE}$ (Home good)

If the wages and profit rates in both sectors are equal,

$W_{XE} = W_{HE}$ and $r_{XE} = r_{HE}$

Then, the relative prices are determined by the relative productivity level.[29]

$P_{XE} / P_{HE} = f (L_{XE} / L_{HE})$

in quality.

[29] In this model L is inverse productivity since it is the labour necessary to produce one unit of output.

PORTUGAL

5. $P_K \cdot K_{XP} + W_{XP} \cdot L_{XP} + r_{XP} (P_K \cdot K_{XP}) = P_{XP}$ (Export good)

6. $P_K \cdot K_{HP} + W_{HP} \cdot L_{HP} + r_{HP} (P_K \cdot K_{HP}) = P_{HP}$ (Home Good)

Because of assumption 2 on capital goods, equations 5 and 6 can be written as:

7. $K + W_{XP} \cdot L_{XP} + r_{XP} \cdot K = P_{XP}$ (Export good)

8. $K + W_{HP} \cdot L_{HP} + r_{HP} \cdot K = P_{HP}$ (Home Good)

If the wages and profit rates in both sectors are equal,

$W_{XP} = W_{HP}$ and $r_{XP} = r_{HP}$

Then, the relative prices are determined by the relative productivity level.

$P_{XP} / P_{HP} = f (L_{XP} / L_{HP})$

Where

P_K : Price of capital.

$P_{XE, XP}$: Price of export good in England/Portugal.

$P_{HE, HP}$: Price of home good in England/Portugal.

$K_{XE, XP}$: Capital input required to produce one unit of export good in England/Portugal.

$K_{HE, HP}$: Capital input required to produce one unit of home good in England/Portugal.

K : Total value of capital (from assumption 2).

$L_{XE, XP}$: Labour input required to produce one unit of export good in England/Portugal.

$L_{HE, HP}$: Labour input required to produce one unit of home good in England/Portugal.

$W_{XE, XP}$: Wage rate for export good in England/Portugal.

$W_{HE, HP}$: Wage rate for home good in England/Portugal.

$r_{XE, XP}$: Rate of return for export good in England/Portugal.

$r_{HE, HP}$: Rate of return for home good in England/Portugal.

If nominal wages[30] and profit rates are the same in both countries for both sectors, the relative prices of tradables will be determined by labour productivity. If we assume productivity to be higher in England, the price of the exportable good will be higher in Portugal before free trade is allowed.[31]

$L_{XP} > L_{XE}$ and $P_{XP} > P_{XE}$

also

$P_{XP} / P_{HP} > P_{XE} / P_{HE}$ (since $P_{HP} = P_{HE}$ by assumption 3)

When free trade is allowed, however, there will be only one international price for the export good:[32]

9. $K + W_{XE} . L_{XE} + r_{XE} . K = P_{XE} = K + W_{XP} . L_{XP} + r_{XP} . K$

and

10. $K (r_{XE} - r_{XP}) = W_{XP} . L_{XP} - W_{XE} . L_{XE}$

If we assume profit rates to be equal in both countries: $r_{XE} = r_{XP}$

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[30] Real wages depend on domestic prices (W/P).

[31] That is why real average wages and profits will be lower in Portugal. In this sense before free trade the burden of low-productivity in tradable commodities will be shared by home goods producers (since wages and profits rates are equal in both sectors) and result in overall low-income in Portugal. As will be shown, after free trade, however, the price of tradables will decline to the level of England, thus the low-productivity in tradable commodities will result in the lower wages and profit rates for the producers of tradable commodities only. It will later be shown that this cannot be sustained in the long-run unless a devaluation equalises the real profitability and the wage level of both sectors.

[32] It is assumed that the international price for the export good in the long-run will be determined by the most efficient producer, in this case England. In the short-run, however, the international price might fluctuate between the pre-trade prices in England and Portugal. If this is the case however, exporters in England will make extra profits over the producers of the home good. Since it is assumed that there is a tendency for profit rates to equalise, the price of the export good will eventually be equalised to England's pre-trade price. Whether this argument is true or not will not change the basic

then

11. $W_{XP} . L_{XP} = W_{XE} . L_{XE}$

and since we assume England to be more productive, the wage level will also be higher:

$L_{XP} > L_{XE}$ and $W_{XE} > W_{XP}$ or $W_{XE} / W_{XP} = L_{XP} / L_{XE}$ [33]

However if we assume wage rates to be equal in both countries ($W_{XE} = W_{XP}$), the profit rate in England will be higher than in Portugal:

12. $K (r_{XE} - r_{XP}) = W (L_{XP} - L_{XE})$

and

$r_{XE} - r_{XP} = (W/K) (L_{XP} - L_{XE})$

since $L_{XP} > L_{XE}$ than $r_{XE} > r_{XP}$

After free trade is allowed, at least one of the components of value-added, the wage or profit rates (probably both), will decline for the producers of the export good in Portugal. The producers of the home good will benefit from free trade since the price of the export good is now lower, and the burden of the lower productivity in the export goods sector which was shared between the home and export sectors is now carried only by the export sector.

If we assume productivity levels for export and home goods to be the same in Portugal, the prices will also be the same before trade:

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tenets of the argument. The important point is that there will only be one international price and it will certainly be between pre-trade prices in England and Portugal.

[33] If we assume that wages also represent total VA, this equation shows that relative VA in two countries is a function of the relative productivity of these countries.

$P_{XP} = P_{HP}$ since $L_{XP} = L_{HP}$

After free trade, however, the price of the export good will decline in Portugal to the level of England and the profit rate for the producers of the export good will decline. Before free trade, given that

$W_{XP} = W_{HP}$ and $L_{XP} = L_{HP}$

then

$r_{XP} / r_{HP} = P_{XP} / P_{HP}$

After free trade, however, the price of the trade good in Portugal will be equal to England:

$P_{HP} > P_{XP} = P_{EX}$ then $r_{HP} > r_{XP}$

Now that the production of the home good is more profitable, resources will be shifted from the production of the export good to the home good unless profitability in the export good is restored by a devaluation or by other protectionist measures. A devaluation makes the export good profitable again by reducing the relative price of the home good. After the devaluation, the relative price of the home good and the profit rate would decline and the profitability of the export good would be restored:

$\Uparrow(r_{XP} / r_{HP\Downarrow}) = \Uparrow(P_{XP} / P_{HP\Downarrow})$

Equally, a tariff rate would have the same impact. If a tariff rate (T) is introduced:

$r_{XP} / r_{HP} = 1$ only if $P_{XP} = P_{XE}(1+T)$

and

$$r_{XP} / r_{HP} = P_{XE} (1+T) / P_{HP}$$

The required tariff rate which equalises the profit rates in both sectors will be determined by the productivity differences between England and Portugal. The larger the productivity differences, the larger would be the price differences and the necessary tariff rate.

The cost structure

So far in this analysis it has been assumed that the cost of the capital is the same in both countries. This, however, is an unrealistic assumption. The cost of capital varies from country to country and this must be taken into account. In this section the impact of the relative cost on relative prices will be shown.

This time, for the sake of simplicity again, we will assume that total wages represent total value-added (i.e. zero profits). Equation 9 can then be rewritten as:

13. $$K_E + W_{XE} . L_{XE} = P_{XE} = K_P + W_{XP} . L_{XP}$$

It is clear that total value-added (W) in both countries is positively related to productivity (inverse L) and negatively related to the cost of inputs (K). From the above equation the following can be written:

14. $$(W_{XE} / W_{XP}) = f (L_{XP} / L_{XE} , K_P / K_E)$$

or

15. $$(VA_{XE} / VA_{XP}) = f (L_{XP} / L_{XE} , K_P / K_E)$$

where relative value-added is a function of relative productivity and relative costs.

From this discussion it is clear that under free market conditions, there must be a positive correlation between productivity and value-added, and a negative correlation between total cost and value-added. In other words, the higher the relative productivity and the lower the relative cost for a country is, the higher the relative value-added. This can be used as a benchmark to detect any market imperfections, including protectionist measures. For example, given the cost structure, if a sector in a country can increase its relative value-added more than its relative productivity, one would suspect a market imperfection which can be captured by estimating a regression between a change in value-added against a change in productivity increase and a change in cost, and saving the residuals from this regression as a distortion index. Before the alternative trade liberalisation index for the textiles and iron/steel industries are calculated, the problem of the index will be discussed.

Problems of the index

This method, like all the others, faces some considerable problems. First, it only measures a relative change in the price distortions and cannot be used to compare the level of protectionism across countries. For example, a country might become relatively more (less) protectionist compared to another country. In reality, however, it might still be less (more) protectionist.

Second, this method reflects all market distortions, not only distortions from protectionist measures. This is, however, a common problem for price distortion indices. Moreover, this index should only be used to calculate the distortions for tradable commodities. If the proponents of free trade are right in arguing that free trade tends to eliminate other forms of market distortions (such as private monopolies), it will nevertheless reflect the trade policies adopted.

Third, as this is a 'relative' index, the positions of countries are not only determined by their own policies, but also by the policies of the other countries. This implies that countries are ranked from the most protectionist to the least protectionist. For example, if some countries become less protectionist, some others will look more protectionist without changing their trade policies.

Fourth, this index cannot take quality differences into account since no measure of quality exists. The share of a sector in total industrial production (the actual size of the output or the share of the country in total world production) can be used as a very rough indicator of quality. A higher level of production is assumed to indicate better quality. Such variables are included in the regressions, and found to be positive but insignificant.

And finally, this method can only produce useful results at a disaggregated level, where the commodities are relatively similar. This results from the difficulties of calculating an average labour productivity index for industrial sectors that includes a very diverse range of commodities. This is the reason why the industrial sectors like textiles and iron/steel are chosen rather than sectors such as machinery and electronics. For the latter industries, more disagregated data (4-digit level) should be used.

Many of these listed problems are common to all indices that are based on price distortions. The advantages of this approach override its disadvantages. First, this index is easier to calculate and more accurate than the others. Second, it can be calculated for shorter time periods (five-year periods or even annually) and therefore it is possible to detect a trend. This may allow us to estimate time-series regressions which is impossible for the other price distortion indices. Third, an international liberalisation tendency can be detected through time by averaging the absolute values of the distortion index for all countries for many years. If there is trade liberalisation, the residuals would, on average, be smaller. And finally, this method can also allow us to see which sectors are protected and promoted more within a country by comparing their ranks in their separate indices.

Results of the empirical work

The following regressions were estimated for two sectors, iron/steel and textiles:

1. VA/L = f (Productivity, Adjusted Cost/L)
2. VA/L = f (Productivity, Adjusted Cost/L, RER)

where

RER : Real exchange rate

The second regression includes changes in the real exchange rate, because changes in value-added might also be related to changes in the exchange rate. The UNIDO database[34] provides relevant data categories for different industrial sectors. Value-added is readily available. Labour productivity and the per worker non-wage cost must be calculated. The database provides index numbers of real production. The index of labour productivity can be calculated by dividing this index by the index of employment. Since this is only an index, it is not directly comparable between countries. That is why a change in these variables for ten years (from 1980 to 1990) will be used instead of the real values. This means that the higher the relative productivity increase and the lower the change in the relative costs of a country, the higher should be the change in relative value-added. The per worker non-wage cost can be calculated with the following formula:

$$Cost/L = (GO-VA)/L$$

The rank orders of the countries according to their 'protection and promotion' rates are presented in the tables 6.9 and 6.10. Both regressions give very similar results. On one hand, the results are encouraging as some well-known 'protectionist and promotionist' countries such as Taiwan and Korea are at the top of the list. On the other hand, it is impossible to confirm these results as there is no other comparable work in the literature. As mentioned earlier, this index can be developed in various ways and provides scope for further research. It can be calculated in shorter time periods and can be used in time-series analysis in order to analyse the impact of liberalisation on economic performance. This, however, is beyond the objectives of this dissertation.

[34] UNIDO Industrial Statistics Database 1996 (INDSTAT 3)

Table 6.9: Iron and steel, rank of the countries according to their protection rates

	Reg 1	Reg 2			Reg 1	Reg 2
Sri Lanka	1	1		Finland	27	25
Uruguay	2	3		Portugal	28	20
Indonesia	3	2		Sweden	29	27
Morocco	4	4		Spain	30	29
Korea	5	5		Iran	31	24
Austria	6	7		Australia	32	30
Algeria	7	6		Bangladesh	33	32
Taiwan	8	NA		India	34	37
Netherlands	9	9		Panama	35	28
Guatemala	10	14		Mexico	36	34
Japan	11	8		Colombia	37	36
Philippines	12	12		Jordan	38	NA
Denmark	13	13		Belgium	39	39
United Kingdom	14	11		Singapore	40	31
Ireland	15	10		Italy	41	38
Egypt	16	15		Hungary	42	40
France	17	17		Kenya	43	44
Greece	18	16		Norway	44	41
South Africa	19	21		New Zealand	45	45
Hong Kong	20	19		Syria	46	46
Chile	21	33		Turkey	47	42
Luxembourg	22	NA		Iceland	48	47
United States	23	23		Israel	49	43
Germany	24	26		Bolivia	50	35
Canada	25	18		Ecuador	51	48
Malaysia	26	22		Czech Republic	52	NA

Table 6.10: Textiles, rank of the countries according to their protection rates

	Reg 1	Reg 2			Reg 1	Reg 2
Taiwan	1	NA		South Africa	31	36
Zimbabwe	2	1		Mexico	32	29
Burundi	3	3		France	33	35
Cyprus	4	2		Bangladesh	34	30
Korea	5	6		Turkey	35	31
Netherlands	6	8		Belgium	36	39
Singapore	7	4		Canada	37	32
Jordan	8	NA		Sweden	38	38
Algeria	9	5		Malaysia	39	33
Ireland	10	7		Egypt	40	37
Uruguay	11	12		Finland	41	41
Germany	12	13		United States	42	42
Indonesia	13	10		Hungary	43	43
Morocco	14	14		Chile	44	49
Iceland	15	11		Spain	45	40
Austria	16	24		Philippines	46	47
Zambia	17	9		India	47	53
Australia	18	16		Bolivia	48	34
United Kingdom	19	15		Ecuador	49	45
Hong Kong	20	18		Kenya	50	52
Denmark	21	19		Panama	51	44
Norway	22	21		Israel	52	46
Colombia	23	22		Italy	53	48
Sri Lanka	24	26		Jamaica	54	50
Iran	25	17		Syria	55	54
Greece	26	20		Czech Republic	56	NA
Japan	27	25		Senegal	57	51
Portugal	28	23				
Malta	29	28				
Zealand	30	27				

6.4. CONCLUSION

Based on the criticisms of the existing measures in the last chapter, in this chapter two alternative measures, one for trade orientation and one for trade liberalisation, were developed. The trade orientation index is based on the SATI index. The simple trade intensity figures were adjusted with the structural characteristics of the countries to find out whether they are more open compared to others. The results of the SATI showed some differences in terms of the ranking of the countries according to their openness from the ranking of the *World Development Report* (1987).

One other regression was estimated to find out whether more open countries grow faster. Changes in investment and exports were included to take into account the external shocks and internal policy choices (other than trade policy). This has never been done before and allows us to separate countries' policy choices from their external shocks. The results of this exercise indicate a positive correlation between openness and economic growth only for the middle-income countries. There is no such correlation for the low- and high-income countries.

Some time-series regressions were also estimated, including trade intensity, and changes in exports and investment rates. The results showed a significant negative correlation between economic growth and trade intensity, and a positive correlation for investment and the exports for middle-income countries. Based on these results, it is concluded that there must be fallacies of composition. In other words, more open middle-income countries indeed grow faster. However, when they are more open, they do not grow faster altogether. In fact, the time-series regression indicates that they grow slower.

As a result, it is fair to conclude that no evidence is found in this analysis to support the export-led development hypothesis. On the contrary, both the cross-country and the time-series analysis strongly suggests that the investment rate is the only consistent and strong factor which promotes economic growth in all income groups. Thus, an investment-led development strategy seems to be a more realistic alternative.

In this chapter, an alternative measure of trade liberalisation was also developed, based on a comparison of changes in value-added in sectors, after taking

into account changes in cost and productivity. The results are encouraging but it is not possible to verify their consistency as there is no other reliable index with which to make a comparison. This index, however, has the potential to be developed further to make it more accurate.

APPENDIX

Table A6.1: Country groups used in empirical investigations.

Low-income countries

Bangladesh, Benin, Burkina Faso, Burundi, Central African Republic, Chad, China, Cote d'Ivoire, Egypt, Gambia, Ghana, Guinea-Bissau, Guyana, Haiti, Honduras, India, Kenya, Madagascar, Malawi, Mali, Mauritania, Nicaragua, Niger, Nigeria, Pakistan, Rwanda, Sierra Leone, Sri Lanka, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe

Note: Low-income economies are those in which 1993 GNP per capita was $695 or less.

Middle-income countries

Algeria, Argentina, Bolivia, Brazil, Cameroon, Cape Verde, Chile, Colombia, Congo, Costa Rica, Dominican Republic, Ecuador, El Salvador, Gabon, Greece, Guatemala, Indonesia, Iran, Jamaica, Jordan, Republic of Korea, Malaysia, Malta, Mauritius, Mexico, Morocco, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Senegal, Seychelles, South Africa, Syria, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uruguay, Venezuela

Note: Middle-income economies are those in which 1993 GNP per capita was between $695 and $8,625.

High-income countries

Australia, Austria, Belgium, Canada, Cyprus, Denmark, Finland, France, Germany, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom, United States

Note: High-income economies are those in which 1993 GNP per capita was above $8,625.

Latin America

Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Thailand, Uruguay, Venezuela

Sub Saharan Africa

Benin, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Cote d'Ivoire, Egypt, Gabon, Gambia, Ghana, Guinea-Bissau, Kenya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Sudan, Tanzania, Togo, Uganda, Zambia

Table A6.2: Data used in empirical investigations

	Openness Index 1984-93	X/GDP 1984-93	Manufacture 1987-91	Oil 1985	GNPpc 1984-93	Population (million) 1984-93	Population Growth 1984-93	GDP Growth 1984-94	Export Growth 1984-95	Investment Growth 1984-96	Enrolment Rate 1985	GNPpc 1983	Government 1980-92	Unrest
Algeria	-0.23	19.5	10.7	25.5	2388	24.0	2.7	1.2	2.3	-4.8	92	2280	21.3	0
Argentina	-0.26	7.4	24.3	1.4	4070	31.7	1.4	2.1	3.0	4.2	107	2810	9.6	1
Australia	-0.29	13.3	14.7	6.6	14816	16.5	1.5	3.1	7.9	1.7	106	11620	12.8	0
Austria	0.15	24.6	25.2	5.1	16145	7.7	0.4	2.4	6.8	4.2	100	8770	13.6	0
Bangladesh	0.12	7.1	8.9	2.4	189	105.5	2.0	4.1	11.0	4.3	60	140	38.9	1
Benin	0.22	7.5	7.8	1.0	356	4.4	3.0	3.3	0.8	2.0	67	310	20.2	0
Bolivia	-0.40	17.3	15.7	17.0	636	6.4	2.2	2.3	5.7	3.7	91	490	18.6	1
Brazil	-0.34	9.0	26.9	3.7	2343	144.3	1.9	2.8	6.2	2.9	101	1730	11.7	0
Burkina Faso	-0.73	5.5	12.5	3.7	243	8.7	2.7	3.0	11.5	10.4	29	180	22.6	1
Burundi	-0.10	8.8	9.1	3.1	228	5.3	3.0	3.3	5.8	3.7	53	230	17.5	1
Cameroon	-0.21	12.3	12.7	6.5	925	11.1	2.9	-1.4	9.8	-6.1	102	830	21.7	0
Canada	0.26	24.3	18.0	6.9	17175	27.2	1.3	2.7	6.0	4.2	105	11700	12.3	0
Cen Afr Rep	0.76	10.6	6.7	0.7	369	2.8	2.4	1.2	5.9	-6.2	74	270	15.8	1
Chad	1.58	14.0	18.0	0.0	177	5.4	2.3	4.3	4.0	18.8	43	130	27.6	1
Chile	-0.13	24.6	17.8	19.3	2042	12.8	1.7	7.2	7.5	12.8	106	1790	19.2	0
China	0.51	15.5	34.2	3.0	403	1108.8	1.4	10.3	12.1	12.6	124	280	15.2	0
Colombia	-0.06	13.6	19.9	4.8	1266	32.3	2.3	4.1	12.7	5.7	107	1300	12.5	0
Congo	0.19	42.2	8.7	41.7	1045	2.1	3.0	0.8	11.1	-11.9	NA	1170	42.0	0
Costa Rica	0.37	26.6	19.9	4.5	1657	2.9	2.6	4.8	7.5	9.4	97	950	20.1	0
Cote d'Ivoire	0.58	32.2	15.1	8.6	729	11.4	3.8	-0.3	1.2	-0.2	75	700	NA	0
Cyprus	-0.43	17.0	14.0	8.3	7844	0.7	1.1	6.1	5.3	4.2	103	4530	14.1	0
Denmark	0.30	27.4	19.0	5.2	19222	5.1	0.1	1.9	4.5	1.1	98	10750	21.0	0
Dominican Rep.	-0.31	12.4	12.4	7.5	921	6.9	2.2	2.9	-6.2	6.7	126	1150	11.1	0
Ecuador	-0.14	22.7	20.7	14.4	1123	9.9	2.4	2.9	5.1	1.5	116	1280	16.0	1
Egypt	-0.64	7.5	17.8	6.2	669	51.8	2.0	3.0	2.8	0.6	91	550	30.7	0
El Salvador	-0.28	12.9	18.7	5.0	999	5.1	1.7	2.9	1.4	8.5	74	710	26.7	1
Finland	-0.19	22.9	22.0	9.5	18148	5.0	0.4	1.1	3.7	-3.1	102	10200	16.3	0
France	0.15	18.0	20.9	4.6	16592	56.2	0.5	2.0	4.4	1.7	109	10070	15.2	0

Gabon	-0.01	41.8	11.6	34.5	4296	0.9	1.8	1.7	2.6	-0.2	113	3810	17.0	0
Gambia, The	0.17	17.6	7.0	6.4	299	0.9	4.0	3.3	6.7	7.4	68	270	33.3	0
Germany	0.39	26.0	29.3	5.1	17708	79.0	0.4	3.6	4.0	4.6	99	11410	15.0	0
Ghana	0.22	15.9	8.9	6.9	402	14.4	3.2	5.1	10.8	14.5	76	320	19.7	1
Greece	-0.46	12.8	19.0	7.2	5331	10.1	0.5	1.9	7.0	1.4	104	3750	14.1	0
Guinea-Bissau	-0.44	8.0	8.3	3.8	209	0.9	2.0	4.3	10.6	6.5	64	190	27.5	1
Guyana	0.53	62.5	12.5	29.9	413	0.8	0.5	0.8	9.9	0.1	103	510	35.8	0
Haiti	-0.34	7.1	13.2	2.2	360	6.3	2.0	-1.9	-4.4	-10.1	96	260	17.9	0
Honduras	0.24	23.4	17.0	6.5	764	4.7	3.1	3.9	3.0	10.8	102	690	17.1	0
Hong Kong	1.55	103.7	15.6	5.9	11374	5.6	0.9	6.5	17.1	6.1	104	5980	6.0	0
Iceland	-0.18	25.1	17.6	6.6	19963	0.3	1.1	2.2	2.0	1.8	99	12510	17.3	0
India	-0.33	5.8	18.0	3.6	323	820.8	2.1	5.0	7.5	5.5	96	270	29.7	0
Indonesia	0.17	23.5	20.9	16.4	576	173.9	1.7	6.0	11.1	6.4	117	570	14.8	0
Iran	-0.53	9.3	13.6	8.8	2862	55.6	3.7	2.1	3.7	0.3	98	3130	11.1	1
Ireland	1.24	53.6	3.3	6.8	9048	3.5	0.1	4.4	9.6	-0.3	100	5110	13.8	0
Italy	0.03	16.1	21.3	4.8	14284	56.9	0.1	2.2	4.7	1.1	96	7140	12.0	0
Jamaica	-0.15	26.7	18.9	16.1	1272	2.4	1.0	2.2	4.3	1.5	100	1240	15.2	0
Japan	-0.45	10.3	28.7	4.6	21360	122.6	0.4	3.7	3.8	5.6	102	9760	8.3	0
Jordan	-0.37	20.0	14.1	18.7	1638	3.2	5.3	1.7	7.1	13.7	99	1890	29.7	0
Kenya	-0.06	15.3	11.7	10.9	344	22.3	3.1	3.5	8.2	2.0	98	330	23.9	0
Malawi	0.58	21.3	13.7	3.9	173	8.7	4.5	3.2	4.7	-0.5	59	170	28.5	0
Mali	-0.10	12.3	8.4	7.8	237	8.2	2.7	2.6	6.3	7.4	23	160	21.2	0
Malta	0.30	44.8	26.1	7.4	5694	0.4	0.7	4.9	9.3	3.6	107	3530	19.5	0
Mauritania	0.40	43.9	10.5	25.7	466	1.9	2.6	1.9	4.1	6.5	49	440	18.8	0
Mauritius	0.52	43.7	23.3	6.9	1989	1.0	0.9	6.6	6.9	14.2	103	1070	16.0	0
Mexico	0.14	16.0	21.6	4.8	2514	81.8	2.3	2.1	11.5	4.9	119	2280	9.7	0
Morocco	-0.21	15.5	17.9	9.9	875	23.6	2.2	3.4	4.7	2.3	77	690	23.7	0
Netherlands	0.49	46.4	18.5	15.9	15386	14.8	0.6	2.5	4.5	2.7	114	9670	12.2	0
New Zealand	0.13	22.3	17.7	5.0	10495	3.3	0.9	1.7	4.2	4.0	107	7250	14.5	0
Nicaragua	-0.36	14.1	17.0	8.0	585	3.6	3.0	-2.2	-4.7	-6.0	101	780	35.6	1
Niger	-0.15	13.8	6.6	13.7	281	7.4	3.3	-0.6	-2.6	-16.9	26	290	23.8	0
Nigeria	0.43	28.1	7.5	28.9	508	92.4	2.9	4.1	7.6	-1.7	82	930	23.1	0
Norway	-0.13	30.2	14.0	22.1	20458	4.2	0.4	2.7	7.3	-0.2	94	13400	16.6	0
Pakistan	0.05	12.0	17.4	4.9	395	108.6	2.8	5.7	8.8	5.2	45	360	19.1	0

Panama	-0.86	7.0	8.2	7.1	2256	2.3	2.0	2.2	7.9	29.5	105	2050	27.0	1
Pap New Guin	0.43	38.9	9.3	21.6	892	3.7	2.2	4.9	10.6	0.9	60	720	29.1	0
Paraguay	-0.23	12.0	17.1	3.8	1194	4.1	3.1	3.5	13.8	3.1	103	1570	12.5	0
Philippines	0.01	17.8	24.8	7.9	684	59.0	2.2	1.1	5.8	1.1	106	670	15.5	1
Portugal	-0.05	22.2	27.7	7.2	5165	9.9	0.0	2.8	8.6	5.9	124	2480	19.4	0
Rwanda	-0.51	5.8	13.0	2.2	305	6.7	2.9	0.6	3.4	0.0	63	260	26.7	1
S. Korea	0.31	29.2	28.5	8.2	4655	42.2	1.1	8.7	11.1	11.0	97	2020	8.9	0
Senegal	-0.22	16.2	13.3	11.4	608	7.0	2.7	1.7	1.1	3.1	56	420	24.0	0
Seychelles	-1.16	12.5	9.5	19.6	4170	0.1	1.2	6.1	15.7	7.0	NA	2240	38.6	0
Sierra Leone	0.12	15.2	6.1	8.6	245	4.0	2.5	1.4	0.4	2.5	61	360	29.0	0
Singapore	0.72	138.0	28.4	54.9	11645	2.7	1.1	7.0	14.1	5.7	115	6540	9.0	0
South Africa	0.27	24.1	24.6	6.9	2383	36.7	2.5	1.0	2.5	-1.4	NA	2290	23.2	0
Spain	-0.29	12.3	20.7	5.3	8961	39.0	0.4	2.8	7.5	4.2	113	4500	12.6	0
Sri Lanka	0.32	22.6	15.0	8.1	457	16.9	1.4	4.2	10.6	4.3	103	320	17.9	1
Sudan	-0.25	5.3	9.1	1.8	446	23.7	2.8	0.9	-4.2	14.2	50	380	23.4	0
Sweden	0.22	26.8	20.7	6.3	19957	8.5	0.4	1.2	3.1	0.8	98	12020	22.8	0
Switzerland	0.34	27.5	23.5	4.1	26894	6.8	0.9	1.8	7.7	2.4	97	15470	9.3	0
Tanzania	0.28	10.6	5.5	4.5	181	24.5	3.2	4.5	5.2	39.3	72	300	37.4	0
Thailand	0.34	24.8	27.9	6.6	1324	53.9	1.7	8.7	18.3	12.1	96	780	16.3	1
Togo	-0.11	19.9	10.0	16.4	360	3.4	3.1	0.8	8.7	-1.8	93	260	25.7	0
Trin & Tob	-0.19	32.7	9.0	39.6	4516	1.2	1.3	-1.0	0.5	-6.1	96	6310	12.4	0
Tunisia	-0.12	24.7	19.2	16.3	1381	7.8	2.4	4.0	8.8	3.6	116	1180	18.6	0
Turkey	-0.24	11.3	19.3	5.4	1860	54.3	2.2	5.7	6.9	8.7	113	1130	11.5	1
Uganda	0.14	6.3	6.1	1.5	279	16.2	2.5	3.7	-2.8	6.0	70	160	15.6	1
United Kingdom	0.09	19.2	22.4	6.1	13535	57.2	0.2	2.2	4.1	3.3	104	8750	17.3	0
United States	-0.35	6.6	18.8	2.2	20637	246.7	1.0	2.9	7.0	4.1	99	13780	13.4	0
Uruguay	-0.09	17.5	25.1	4.0	2506	3.1	0.6	3.0	1.2	5.6	107	2040	17.4	0
Venezuela	-0.18	24.3	14.9	25.7	3204	18.8	2.5	3.1	4.1	11.3	108	4540	14.4	0
Zambia	-0.39	32.7	32.8	43.0	357	7.8	3.4	1.1	5.5	5.2	99	520	32.6	0
Zimbabwe	0.12	25.0	28.3	7.8	628	9.4	3.2	2.6	0.0	11.3	135	800	29.8	1

Source: World Bank Stars Database except the unrest variable which is taken from Sachs and Warner (1996)

CHAPTER SEVEN

THE EAST ASIAN MIRACLE

7.1. INTRODUCTION

Since the Second World War, a number of Asian countries have undergone a process of late industrialisation: Japan in the 1950s; Hong Kong in the 1960s; Taiwan, Korea and Singapore in the 1970s and 1980s; and possibly Malaysia, Indonesia and Thailand today.[1] The average growth rates of these countries have been so impressive that it has been called a 'miracle'. Even though, due to the recent financial crisis, the 'Asian miracle' has now lost some of its inspiration, the remarkable sustained growth for decades requires an explanation. The impact of this development has been so great that '[it] forced a major rethinking of the relationship between global capitalism and Third World economic development.'[2]

The ever-growing literature and the arguments surrounding this miracle cover a wide range of social, economic and historical factors. From 'good luck' to Confucian culture, from land reform to repressive labour systems, from foreign aid and investment to historically strong states, various factors have been offered as explanations. The economic arguments centre around industrial policy (role of state) and export-led development. All of these arguments, though not exhaustive, are important and contribute to the explanation of this miracle. However, what one can learn from the experiences of these countries for development policy is less clear.

The World Bank and the International Monetary Fund, two consistent advocates of liberalisation policies, have fostered stabilisation and structural adjustment policies in developing countries. The apparent failure of these policies, and the increasing dissatisfaction with them have put these institutions on the defensive. They have produced a number of reports to justify their positions and to prove that their policies do, in fact, work. A 1994 report on Africa argued that the failure to reverse economic decline in Africa was not as a result of stabilisation and the structural

[1] Henderson and Appelbaum (1992: 3).
[2] *Ibid.*

adjustment policies, but the failure of governments to implement them. The report argued that countries that implemented the advised policies did relatively better than the others. The results may not be satisfactory, the report argued, but if these policies had not been implemented, things would have been much worse.

Another important report, 'The East Asian Miracle' ('the Report' thereafter), published in 1993, partially broke from the previous noeclassical line. The Report accepted that there had been heavy state intervention in these countries and that state intervention had contributed to their strong performance. Though this was a step forward for the World Bank, compared to the 'previous arguments that portrayed these countries [...] as paragons of market liberalism,'[3] this was not enough to convince the authors of the Report that state intervention might play a positive role. They argued that 'although intervention [...] could be effective, it was neither a powerful nor a necessary element of the East Asian miracle.'[4] As Kwon argued,

> The report makes an all-out effort to assert that east Asian economic success has nothing to do with government. If government is to deserve any credit, it only does so because its myriad interventions (in pricing, interest rates, wages, bank credit, monetary and fiscal policy, protection of domestic industries, export promotion and subsidies and industrial policies, and so forth) must have, by some magical coincidence, jellied into a neo-classical formulation. (Kwon, 1994: 635)

The Report argued that it was 'very difficult to establish statistical links between growth and a specific intervention and even more difficult to establish causality.'[5] The East Asian success was a result of getting the 'basics' or 'fundamentals' right. The arguments produced in this report were a mirror image of the arguments produced in the report on Africa. Since state intervention is ineffective, success must have been achieved despite state intervention. If these countries had had less state intervention, they could have done even better. This, however, is not a credible scientific argument.

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[3] Rodrik (1994: 27).
[4] Fishlow and Gwin (1994: 5).
[5] World Bank (1993: 6). Amsden answers this argument well: 'But speaking of the devil! If it is not possible to establish statistical links "between growth and a specific intervention," then neither is it possible to establish statistical links between growth and non-intervention.' Amsden (1994: 628)

Given their miraculous performance, one may wonder how they could have done better than they already did.

The 'basics' meant macroeconomic stability, particularly control of inflation through fiscal and monetary policies, and stable and 'realistic' exchange rates. According to the Report the 'high performing Asian economies' (HPAEs) owe their success to good macroeconomic policies. This argument, however, is meaningless since 'no one proposes bad macro policies'. No one would like to have high inflation or a budget or balance of payments deficit. The theoretical disagreement centres on the characteristics of what are deemed good and bad macroeconomic policies. The World Bank argued that these are the causes of slow growth. Alternative theories, however, argue that macroeconomic imbalances are the symptoms of the disease rather than the disease itself, and a focus on the symptoms may make the situation even worse. From this perspective one can argue that HPAEs succeeded not because they kept inflation, budgets and balance of payment deficits under control, but they were able to keep them under control because they succeeded in developing a healthy and growing economy through industrial policies. The Report was

> almost a textbook example of neoclassicists visibly confused but too proud to admit their failure – having been so quick to blame the governments for economic failures in the past, they are now reluctant to admit a positive role for the governments in a successful economy.' (Kwon, 1994: 635)

The Report was financed by Japan and published in the context of criticisms of the World Bank's structural adjustment policies.[6] Japanese opposition to World Bank policies was expressed openly during the 1980s and the 1990s. Japan wanted the World Bank to pay more attention to the experiences of the HPAEs and particularly to the role of state.

The aim of this chapter is not to solve the 'mysteries' of the miracle. Causes of the miracle are complex and beyond the limits of this dissertation. Instead the objective of this chapter is a modest one: to eliminate the fictitious reasons in order to understand the real reasons behind the miracle. This chapter will challenge the

[6] Fishlow and Gwin (1994: 3), Wade (1994: 56).

arguments presented in the Report. It will be argued that despite all of its efforts, the Report failed to distort the reality of the experiences of these countries. The Report's empirical work was not only analytically wrong but also did not support the basic arguments of the Report. Thus, as Amsden (1994: 627) rightly points out, 'because the Report cannot prove its own major conclusion, it is quintessentially political and ideological.' Before the arguments and the problems of the Report are demonstrated, a brief summary of the important historical factors that might have helped these countries in their development process will be presented.

7.2. HISTORICAL LEGACIES

There is extensive emphasis on export-orientation in the neoclassical interpretation of the successes of these countries. According to Little,

> the major reasons [for their success] is their labour-intensive export-oriented policies [...] Nothing else can account for it. Taiwan and Korea do not have very good capital markets. Their tax systems are not very good. [...] Planning [...] has not played a key role. Moreover, the nonhuman resources of Taiwan and Korea are not notably favourable to high income growth. [...] Luck has played little part in their development. Aid was [...] not important during the high growth period. Borrowing has remained very important for Korea but not for the others. Private foreign investment has played a major role in Singapore; though elsewhere it has played a useful but only minor role. (Little, 1981: 43, cited in Chow and Kellman, 1993)

Development, however, is not a simple technical matter and cannot be analysed as such. One cannot simply look at some economic measures such as investment rate or trade ratio in these countries and by estimating simple regressions determine the factors behind their rapid economic development. The high level of investment and the high trade ratio may have contributed significantly to the development of these countries. However, the high levels of these variables themselves require explanation. One should also analyse the factors behind the high level of investment and trade. Why have only these countries achieved such high levels of investment and trade? Why did

other developing countries fail to do the same? To answer these questions, the social, political and historical circumstances of these countries must be taken into account. As Mason *et al.* (1980: 2) point out '[t]here is much more to [these countries'] economic development than sensible monetary, fiscal, and foreign exchange policies.'

Given the diversity of their backgrounds and their performances, the grouping of the eight countries under the umbrella of HPAEs is problematical. As Perkins points out there are

> at least three quite distinct models even though all three have some features in common. There is the manufactured export-led state interventionist models of Japan, Korea and Taiwan; the free port service, commerce-dominated model of Singapore and Hong Kong; and models of those economies rich in natural resources (at least at the beginning) but not in human resources (Indonesia, Malaysia, and Thailand). (Perkins, 1994: 655-656)

If the successes of these countries were, at least partially, based on their export performance, one should explain under what particular circumstances these countries were able to increase their exports. For example, as many writers agree, the beginning of industrialisation in the newly industrialising countries coincided with an remarkable expansion in world trade. Without such an historical coincidence, 'it is highly doubtful that Hong Kong and Singapore could have achieved their double-digit growth rates, or that Korea and Taiwan could have made the switch from import-substituting to the export-oriented industrialisation strategies, in the late 1950s and early 1960s.'[7] When one analyses the development processes of these countries, one cannot ignore the impact of the particular historical circumstances. As Henderson and Appelbaum put it clearly:

> [W]e can argue that history so infuses the present and sets the parameters for the emergence of the future that any social science that does not place it at the heart of its explanatory system is doomed to deliver woefully inadequate accounts of whatever phenomenon happens to be under scrutiny. Not

[7] Henderson and Appelbaum (1992: 10); see also, Hersh (1993: 57), Fishlow and Gwin (1994 : 9).

> withstanding the fact this is precisely one of the central epistemological problems of much which passes for economic science in the contemporary world, history is one of the factors that has been utilised quite heavily in explanations of East Asian economic transformation. (Henderson and Appelbaum, 1992: 3)

This section will briefly summarise the historical circumstances that contributed to the rapid development of the East Asian countries, particularly those that have been the most successful: Japan, Taiwan and Korea. The impact of the Cold War and the influence of the US policies on their development are fairly obvious: 'The economies of Japan, Taiwan, and Korea – and the militaries of the latter two countries – were deliberately built with US aid and technology transfer as bulwarks against communism.'[8] The historical circumstances of the two tiny city states, Hong Kong and Singapore, might have also contributed to their development process and will be summarised briefly.[9]

The Cold War and the emergence of Chinese power in the region were important incentives for the United States to help the countries in the region and particularly Japan. The isolationist policy of the United States prevented Japan and other countries from developing trade relations with China. If something was not done to compensate for the loss of trade with China, Japan and the other countries in the region could have been lost to the so-called communist threat. 'Under the circumstances finding outlets for Japanese production was a primordial issue.'[10] President Eisenhower marked this clearly:

> Japan cannot live and Japan cannot remain in the free world unless something is done to allow her to make a living. Now, if we will not give her money, if we will not trade with her, if we will not allow her to trade with the Reds [...] what is to happen to Japan? It is going to the Communists. (Eisenhower, 1954/1960, cited in Hersh, 1993: 30)

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[8] *Ibid.*, p. 9.

[9] The surface areas (in sq. km) of Hong Kong and Singapore are 1040 and 620 respectively, and their populations were 5.8 and 2.8 million in 1994.

Thus, Japan was chosen as a partner in the region to support the policies of the United States. The United States was willing to help Japan to become a dominant power in the region as long as Japan's loyalty to the United States was secured. The Korean War was a 'lucky' incident that helped the Japanese economy greatly. 'Japan became the supplier [...] of military provisions to the war effort, thus alleviating the difficulties of logistics for the US armed forces.'[11] As Schaller argued,

> [t]hese expenditures not only helped balance the still chronic dollar gap and compensated for the barriers imposed on trade with China, but they created for the first time since 1945 an assured market for heavy industrial and high technology exports for which no other customer existed. (Schaller, 1985: 288, cited in Hersh, 1993: 24)

The injection of American money into the Japanese economy helped to reduce the currency shortage. More importantly, the technology and the know-how transfer was a major contribution to Japanese take-off. For example, Okimoto, Sugano and Weintein (1984) have argued that development of the Japanese semiconductor industry in the 1950s would have been inconceivable without the ability to acquire the technology from companies of the United States under licensing arrangements.[12]

The United States supported Japan through favourable trade relations. For decades, the United States has been Japan's number one trading partner whereas Japan is the number two trading partner for the United States. After the Vietnam War, trade relations between the United States and Japan experienced serious confrontation due to the trade gap in favour of Japan and Japanese protectionist policies. As Beckstead has argued 'pure and simple, the situation reflected unfair trade practices on the part of Japan.'[13] Furthermore, the United States 'acted as Japan's broker in Europe; the logic being that if the Japanese could not find takers for their wares in Europe, their cheap products would flood the United States and there would be little chance of keeping them away from the Chinese market.'[14]

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[10] Hersh (1993: 30).
[11] *Ibid.*, p. 24.
[12] Okimoto, Sugano, and Weintein (1984), reported in Henderson and Appelbaum (1992: 12).
[13] Beckstead (1993: 250).
[14] Hersh (1993: 31).

The political motivation of the United States was not less obvious in the case of Korea and Taiwan. The United States economically and militarily supported South Korea against North Korea and Taiwan against China. Between 1945 and the end of the 1970s, Korea and Taiwan received US$ 13 and US$ 5.6 billion, respectively. Between 1953 and 1962, US aid financed 70 percent of Korean imports and 80 percent of total fixed capital formation. During the same period US aid financed 85 percent of the current account deficit and 38 percent of gross domestic investment. During 1946-78, Korea received around US$ 6 in US economic grants and loans. The same figure was only US$ 6.86 billion for all of Africa and US$ 14.8 billion for Latin America. In Taiwan, the US aid financed 95 percent of its trade deficit and 40 percent of its gross domestic capital formation in the 1950s. Military aid was also high. After the Korean war, between 1955 to 1978 'Taiwan and Korea received 9.05 billion dollar[15] while the whole of Africa and Latin America received 3.2 billion dollar; only Iran got more, especially in the period after 1972 (CIA Handbook, 1979).'[16] The amount of financial aid was so substantial that arguably 'only the most corrupt of political economies could have failed to develop in the face of such massive amounts of governmental assistance.'[17] The US also supported Korea and Taiwan through favourable trade relations. Korea steadily became the number seven trading partner of the US. The US contribution was not limited to financial aid but included close collaboration between American and Korean officials.[18] Aid from the US was the largest but by no means the only one. Smaller contributions came from the UN (US$ 1.9 billion) and from Japan (US$ 1 billion) as a result of the normalisation of the political relationship.[19]

The necessary technology for the semiconductor and consumer electronics industries in these countries has been obtained through strategic alliances with US and Japanese companies.[20] This argument is confirmed by Mason *et al.* (1980: 47), who

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[15] US$ 11.6 billion, in Henderson and Appelbaum (1992 :11).
[16] Hersh (1993: 49). See also Bello and Rosenfeld (1990: 438), Cumings (1987: 67), Eckert (1992: 295), Henderson and Appelbaum (1992: 11), So and Chiu (1995: 194).
[17] Henderson and Appelbaum (1992: 11).
[18] For more details see Mason *et al.* (1980), chapter six.
[19] *Ibid.*, p. 3.
[20] 'Alice Amsden in her work on Korea (1989) argues that the key to late industrialisation has been the ability to learn and adopt technologies and labour processes developed elsewhere. While 'industrialisation through learning' has been central, the point remains that if it were not for the willingness of foreign corporations to transfer their technology in various ways, the 'learning process'

argued that compared to Latin America, the early import-substitution phase of the Korean and Taiwanese industrialisation processes was shorter as a result of the US influence in the region. According to them, the export-led programmes adopted by Taiwan and Korea were actually imposed by the United States.

The Vietnam War was also an important factor in the development of Korea as well as Taiwan. The Vietnam War for Korea played the same role as the Korean War played for Japan.[21] The war gave a boost to both economies in the form of US purchases of agricultural and industrial commodities. As was the case for Japan, the United States was also willing to open its markets to these countries in order to promote export-led industrialisation. The United States has been their number one trading partner for decades.

The colonial pasts of Korea and Taiwan also played an important part in their development.[22] Japanese colonialism and the close economic integration with Japan after decolonisation were influential. Japan's imperial ambitions and the need for a secure and continuous supply of agricultural commodities which could not be guaranteed by domestic production forced Japan to reform and expand agricultural production in Korea and Taiwan by transforming their agricultural systems. Successful land reform after decolonisation, which is considered to be one of the most important factors in Korean industrialisation, was a result of Japanese colonialism and the Cold War. Land reform, which is an extremely complicated and difficult social phenomenon, was relatively easier in the absence of a strong landlord class to resist it. Land reform in North Korea also made the land reform more desirable in South Korea.

The colonial bureaucracy destroyed the traditional, inefficient state structures of these countries, and created strong states upon which subsequent developments would be based. Moreover, close economic integration with Japan provided a base for their industrialisation processes. Because of increasing militarization and rising wages during the 1930s, the Japanese state encouraged Japanese companies to invest into industrial capacity in these countries 'particularly in food processing, textiles, wood pulp and paper, fertilisers, aluminium and copper refining, and shipbuilding.'[23] The

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would have been more difficult and much slower than was in fact the case'. (Henderson and Appelbaum, 1992: 12)

[21] See Hersh (1993: 50).

[22] For details see Mason *et al.* (1980).

[23] Henderson and Appelbaum (1992: 8).

export-led developments of these countries started with the transfer of Japanese technology in textiles and gradually moved to heavy industry and high-tech commodities. Japanese investment into these countries and the exports to Japan also required considerable investment in infrastructure.

Moreover, following colonialism, both countries benefited from the 'Japan factor'; the arrival of Japanese capital in East Asia. In the early 1970s, there was an expansion by Japanese companies into the newly industrialising countries as a result of both rising production costs in Japan and US protectionism against Japan. Japan benefited both from lower labour costs and the privileged access of the newly industrialising countries to the huge American market. Korea and Taiwan, as well as Singapore and Hong Kong, benefited from this expansion. The newly industrialising countries became a base for the relocation of Japan's labour-intensive industries. Japan also developed trade relations with these countries and gradually replaced the US as their main trading partner. For example, during the 1950s, the United States was the dominant exporter to Taiwan as a result of tied aid. Japan, however, became the dominant supplier to Taiwan in 1964. By 1971, Taiwan obtained 44.5 percent of its total imports from Japan, compared to only 22.1 percent from the US.[24]

The relevance of the social, political and historical circumstances of Hong Kong and Singapore to their development is less obvious but not insignificant. They owe their 'existence to the British interest in trading with China and the East Indies.'[25] As entrepots and naval stations, they were not the sort of places to be developed for productive purposes by British colonialism. However, the British provided

> efficient and relatively liberal bureaucratic and legal systems, which remain – particularly in the case of Singapore – probably the least corrupt in the entire region. Furthermore, by being nurtured as key regional nodes for intra-empire trade, both territories benefited from extensive pre-existing networks of trading houses and specialised services as they began to develop their export-oriented industrialisation strategies in the 1950s (Hong Kong) and 1960s (Singapore). (Henderson and Appelbaum, 1992: 8)

[24] Baldwin, Chen and Nelson (1995: 19).

Britain also left 'a century of experience of trade and finance, a large presence of expatriate British trading and financial enterprises (which over time transmitted their skills and information to locals.'[26] As a result, 'Hong Kong was second only to Tokyo in East Asia as a financial, insurance, shipping, and business-service centre.'[27] Manufacturing in Hong Kong benefited from two important historical events in the region. The first was the US military involvement in Vietnam. The tourist industry started during the Vietnam War, bringing a large inflow of US dollars into the economy. The second was the formation of socialist China, which initially led Hong Kong to lose its entrepot function but resulted in its emergence as East Asia's second industrial power. This was a result of the development of a relatively advanced textile and garment industry, based on highly experienced refugee labour and capital from Shanghai utilising state-of-the-art technology. The development of Hong Kong's textile and garment industry and the pre-existing trading networks contributed to the initial industrialisation process.[28] Moreover, Hong Kong benefited from the support of the socialist regime in China. The trade with China, which is based on cheap Chinese products, subsidised the Hong Kong economy by lowering the cost of living and strengthening its competitiveness in world markets. Because Hong Kong 'was the only port where China could gain the foreign currency to buy necessary foreign equipment,'[29] China was very willing to supply food products, raw materials, drinking water, etc., at relatively cheap prices. The foreign currency gained from the trade with Hong Kong 'was sufficient to pay for 30-50 percent of China's imports.'[30] Lastly, like the other newly industrialising countries in Asia, Hong Kong also benefited from easy access to the US market. During the 1960s and 1970s, exports to the US accounted for 30.5 percent of Hong Kong's exports.

In case of Singapore, there are four important reasons that can explain its rapid development. The first is its colonial past, which produced efficient and relatively liberal bureaucratic and legal systems. The second is its exceptionally advantageous geographical location: Singapore is placed along the world's main East-West transportation and communications route which has enabled it to develop service

[25] Geiger and Geiger (1973: 4).
[26] Lall (1994: 649).
[27] Geiger and Geiger (1973: 11).
[28] Henderson and Appelbaum (1992: 9) and So and Chiu (1995: 194).
[29] So and Chiu (1995: 206).

exports.[31] By the 1980s, internationally traded services became the most dynamic component of the economy. As Huff (1995: 737) argues, the 'Republic's "natural resource" of location and uniqueness as a city-state have particular relevance to the Singapore model's likely replicability.' The third is its exceptionally high level of foreign direct investment. Indeed, during the 1980s, Singapore was the largest developing country recipient of foreign direct investment.[32] In 1992, only 16.2 percent of its total manufacturing output was produced by wholly local firms which accounted for only 8.4 percent of exports. A massive 83.8 percent of manufactured output[33] was produced by foreign companies, which accounted for 91.6 percent of exports. And lastly, Singapore's industrialisation was initiated by very heavy state intervention and advanced industrial policies. Apart from the unusually high rate of FDI, Singapore's high growth rate since the 1960s is largely the result of unusually high savings and investment rates, which averaged 28.8 percent and 40.5 percent respectively during the 1970s. The driving force behind this high level of savings was the public sector, which contributed 66.8 percent of total savings in 1985.[34]

Regardless the role of social, political and historical circumstances in the development of Hong Kong and Singapore, it is not clear what kind of guidance these two small countries (city-states) can provide regarding development policy. The development of these countries owes a lot to the specific circumstances of the post-war capitalist world economy. A large amount of American financial and technological aid, as well as privileged access to the US market helped them to move to export-led development. Other historical and geographical factors were also important. The impact of the colonial period as well as favourable geographical locations helped these countries to develop rapidly. Finally, the emergence of Japan as a world economic power in the region also benefited the development of these countries.

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[30] Kelly (1987: 92).
[31] Huff (1995).
[32] 13 percent of all FDI in developing countries.
[33] 74.2 percent wholly or majority foreign company and 9.6 percent majority local company, see Huff (1995), table 6.

7.3. STATE AND INDUSTRIAL POLICY

According to the Report, '[m]acroeconomic stability and rapid export growth were two key elements' in East Asian success and 'governments achieved macroeconomic stability by adhering to orthodox policy prescriptions.'[35] They kept the public deficit low which helped to control inflation. The low inflation and manageable debt in turn facilitated realistic exchange rates that elsewhere undermined export performance. According to the Report, exchange rate policies played a pivotal role in promoting exports. Even though most HPAEs started their industrialisation with protectionist policies, they quickly moved to more liberal ones. The aim of this section is to challenge the views of the Report on the exchange rate and trade policies adopted by these countries. The evidence that will be presented suggests that their exchange rate policies were not different from those of other developing countries.

7.3.1. Exchange rate policy

The World Bank has been a consistent advocate of so-called 'exchange rate protectionism' as opposed to other forms of protectionism. This is because exchange rate devaluations do not discriminate against the 'winner' sectors and allow the comparative advantage principle to decide which sectors will be competing in international markets. According to the World Bank, this is the best option for developing countries wishing to stay competitive and eliminate the possible negative effects of trade liberalisation. Governments should not intervene with trade in any other way; try to stay competitive by devaluations and let the markets decide which sectors will be the winners and losers.

According to the Report, 'several HPAE governments used exchange rate policies to offset the possible adverse impact of trade liberalisation on producers of import-substitutes. A few went beyond this objective [...] and used deliberately undervalued exchange rates to assist exporters.'[36] The Report argues that during the

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[34] See Huff (1995), table 8.
[35] World Bank (1993: 105).
[36] *Ibid.*, p. 125. The Report, however, also argues that before the trade policies were 'liberalised' gradually '[e]xport prices [in these countries] were set in the international market and were often substantially less than current marginal average costs. Losses on export production offset profits in the

1980s, particularly Taiwan, Korea and Indonesia deliberately undervalued their currencies to boost their exports and '[o]ne can see a fairly clear relationship between devaluations and export growth in the 1980s.'[37]

However, the Report does not provide empirical evidence to support this argument, except by using Dollar's (1991) openness index to show that the HPAEs avoided severe exchange rate appreciation compared to Sub-Saharan Africa and Latin America. As demonstrated in chapter five, Dollar index has theoretical weaknesses and cannot be used as a measure of real exchange rate devaluations. Moreover, no justification is provided as to why the Dollar index should be preferred over more straightforward measures such as real exchange rate devaluations.

In this section it will be argued that the Report is not only wrong in terms of the exchange rate policies followed by the HPAEs, but also its arguments with regard to exchange rate policies appear self-contradictory. The Report even made mistakes on the basic facts. An inspection of the real exchange rates of these countries proves that the Report's assertion is unsubstantiated. To pursue this argument, a discussion of the measurement of the real exchange rate is required.

Measuring the real exchange rate

There are two main competing measures of the real exchange rate which yield different results. The conventional measure is called the purchasing power parity real exchange rate (hereafter multilateral real exchange rate or MRER) which is defined as:

$$MRER = ER.P_I / P$$

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protected market, while competition in the international market ensured that the firm would not suffer from loss of cost discipline' (World Bank, 1993: 295) This statement however, is an implicit admission of the fact that these countries had 'overvalued' exchange rates at least at the beginning of their industrialisation period. Because, if these countries had used 'realistic' exchange rate policies and had followed their comparative advantages, the exporters would not have made losses with the prevailing international prices and would not have to be compensated in the protected domestic markets. The fact that export prices did not cover even their average costs simply means that they did not follow their 'comparative advantage' but they created their own competitiveness based on the anticipation of scale economies.

[37] *Ibid.*, p. 126.

where ER is the nominal exchange rate, P_I and P are international and domestic prices measured as the consumer price index or wholesale price index. The second measure is called the 'internal' real exchange rate (IRER) and can be defined as:

$$IRER = P_T/P_H$$

where P_T is an index of prices of tradable goods, and P_H is an index of prices for nontradables or home goods.

Though the MRER is a more conventional measure and is used widely, the IRER is more accurate since the MRER does not take into account the commodity composition of exportables.[38] The MRER would only be accurate if all countries produced and exported the same bundle of commodities. Conventionally, the real exchange rate is used to measure changes in competitiveness. It is assumed that if a country's inflation rate is above the world inflation rate, that country will be uncompetitive in terms of its exports. To increase the competitiveness and profitability of exporters an exchange rate devaluation is required to keep the real exchange rate constant.

The MRER, however, does not refer to the prices of the specific commodities that are exported. A country may become uncompetitive not only as a result of higher overall inflation but also as a result of changes in the prices of exportables in international markets. The prices of the exportables in international markets may change as a result of demand and supply conditions, various shocks and productivity increases. This is particularly important for developing countries which usually export a limited number of primary commodities. Since the prices of exportables fluctuate sharply and frequently, using a comparison of international and domestic inflation rates to adjust the nominal exchange rate instead of using the prices of exportable commodities would substantially distort the real exchange rate and would not reflect the real changes in competitiveness.

The IRER, however, reflects the impact of relative overall price changes (inflation) as well as the impact of the relative price changes of tradables. This can be

[38] For a more in-depth discussion of the alternative measures of the real exchange rate see Masters and Ianchovichina (1998) and Holden (1991).

shown by the following. When the law of one price holds, the domestic and international prices of tradables will be related through the nominal exchange rate:

$P_T = ER \, . \, P_{TI}$

(where P_{TI} is the international price of tradables)

and

$IRER = ER \, . \, P_{TI} / P_H$

Thus, the IRER varies as a result of changes in the exchange rate, changes in the domestic average price level and changes in the international prices of tradables. The IRER reflects changes in the international prices of tradables as a result of fluctuations and productivity changes.[39] The differences between the two measures of the real exchange rate matters because they may give substantially different results. For example, the works of Masters and Ianchovichina (1998) on Zimbabwe and Holden (1991) on South Africa show some notable differences between the two measures. In Zimbabwe, the MRER shows a depreciation between 1967 and 1987 whereas the IRER, in contrast, shows a sharp appreciation.[40] In the case of South Africa, the opposite is the case. The MRER shows an appreciation between 1973 and 1987, whereas the IRER shows a depreciation.[41] The empirical work presented in this section also shows similar contradictory results particularly for African countries.

The IRER is also not a perfect measure of the real exchange rate. This is because of the so-called Ricardo-Balassa effect[42] which suggests that the real exchange rate may appreciate as a result of faster productivity growth in the production of tradables than of home goods. The index could also be improved by using a trade-weighted average of several trading partners. Nevertheless, the IRER is a fairly good measure of the real exchange rate and has an additional advantage: it is possible to

[39] This formula can also be adjusted to take into account the ad valorem taxes and marketing margins. See Masters and Ianchovichina (1998: 466).
[40] Masters and Ianchovichina (1998: 469).
[41] Holden (1991: 8-9).
[42] Masters and Ianchovichina (1998: 467).

calculate a composite IRER index for many countries. This allows for a comparison of different regions or country groups.

In the following section, IRER will be used as a measure of the real exchange rate. In same cases, MRER will also be used to confirm the consistency of the results. The IRER can easily be calculated by using the price levels of home goods and exportables. These price levels can be calculated by dividing the nominal values by the real values. A weighted average price for tradables can be used to construct a composite index for the price of tradables. Alternatively, the relative price of exportables to home goods (P_X/P_H) can be used since a change in the nominal exchange rate would not alter the relative price of exportables and importables (P_X/P_M).[43]

The empirical evidence

In the case of Korea, (see figure 7.1-A), the IRER appreciated continuously between 1975 and 1993 (except for 1978-80) after a period of depreciation between 1970 and 1975.[44] Thus the Report's argument that 'Korea used exchange rate protection from 1986 to 1989 when it ran a current account surplus'[45] is not supported by the evidence. In fact this argument is surprising because not only the IRER but also the MRER and the nominal exchange rate appreciated during this period. An investigation of Indonesia's IRER reveals similar results (see figure 7.1-B). Even though the MRER depreciated continuously during the 1980s, the IRER first depreciated from 1967 to 1980 and then it fluctuated around a slightly declining trend which indicates an appreciation of the IRER. The same is true for the other HPAEs. An investigation of their individual IRERs proves that these countries did not use real exchange rate devaluations for competitive purposes. In almost all HPAEs, the real exchange rate appreciated during the 1980s.

However, this does not necessarily disprove the argument that the exchange rate may have played an important part in promoting exports. During the 1980s, the exchange rates of almost all countries appreciated after a decade of depreciation in

[43] In other words, a nominal exchange rate devaluation would change (P_X/P_H) and (P_M/P_H) equally.
[44] Note that an increase in the ER, MRER and IRER implies a depreciation.
[45] World Bank (1993: 126).

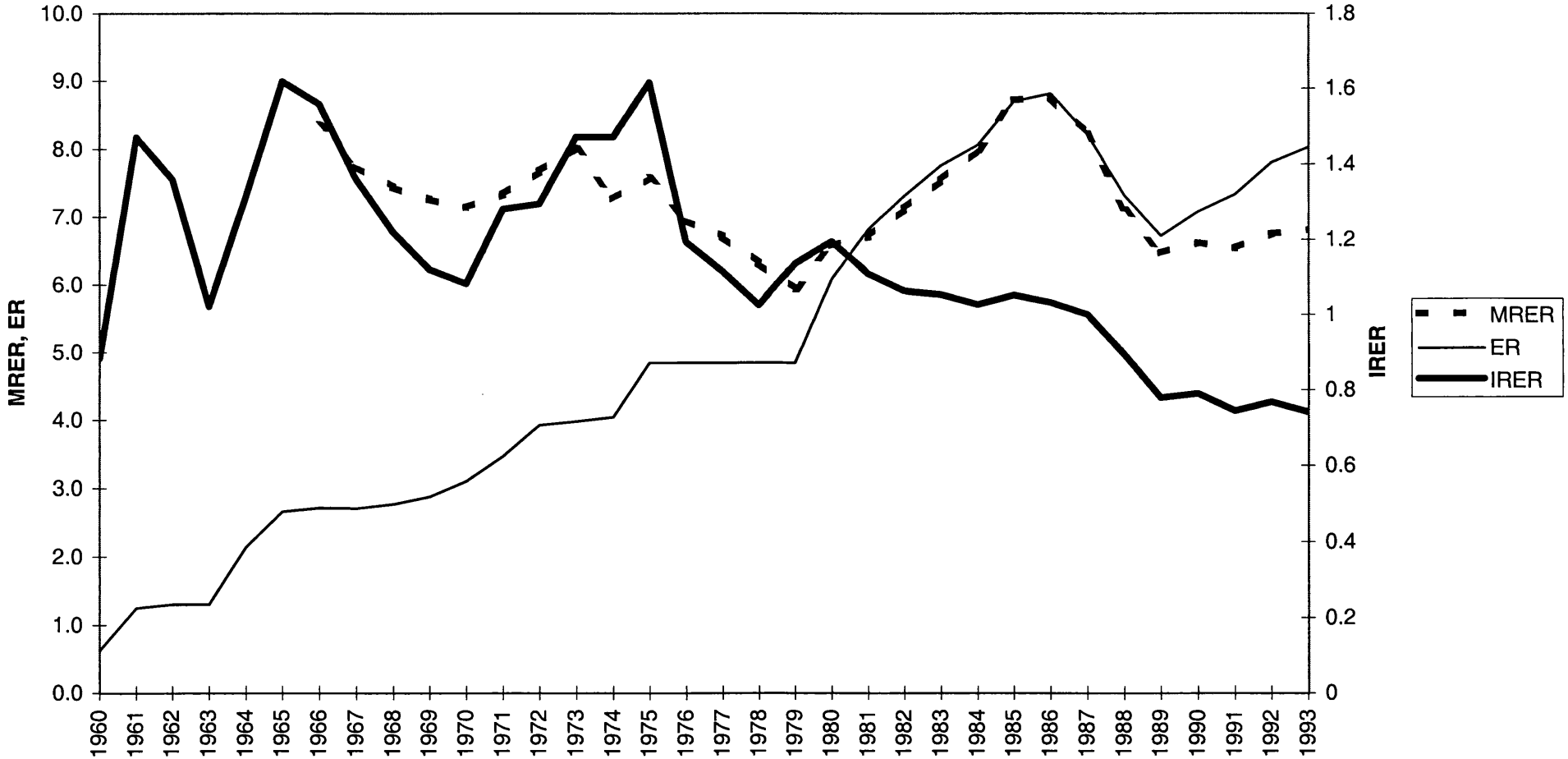
response to the 1970s' oil crisis. Many countries responded to the oil crises of 1973 and 1979 by dramatically devaluating their currencies and then, after the decline of oil prices during 1980s, reversing the policy. This is why one should also consider the relative performances of the HPAEs in terms of real exchange rate devaluations. Even though their currencies appreciated during this period, the level of this appreciation might have been lower than for the other countries.

Before the HPAEs' exchange rate policies and exports are empirically investigated, a brief note should be made on the theoretical arguments of the Report about devaluation and competitiveness. The Report appears not to criticise the 'undervalued exchange rates' in these countries. This clearly contradicts the free-market exchange rate approach and implies 'mercantilism'. From the logic of neoclassical static-efficiency, undervalued exchange rates are as inefficient as overvalued exchange rates. Moreover, though no one disputes the importance of keeping a 'realistic' exchange rate, relying on devaluation as a competitive tool is not the best, or even a good, option for developing countries. There are fallacies of composition involved. What is true for one country is not necessarily true for all. When all developing countries devalue their currencies they may not be able to increase their aggregate exports since the demand elasticities for most of their commodities are low. Fixed exchange rates (fixed to the US dollar) were designed to avoid competitive devaluation, which were thought to be destabilising.

Observation of the IRER and MRER seems to contradict the Report's view. When countries are ranked according to their degree of real exchange rate devaluation by using both measures of the real exchange rate for the 1960s, 1970s and 1980s, HPAEs are not high on the list (see tables 7.1 and 7.2). For example, table 7.1 (IRER) indicates that during the 1960s, out of 91 countries, Malaysia was number 88, Japan 87, Indonesia 86 and Thailand 84. Only Korea ranked a relatively high, 38. This means that, during the 1960s, 35 out of 91 countries devalued their currencies more than Korea. During the 1970s, most countries felt the impact of oil shocks. The relative export prices of Indonesia and Malaysia were high as a result of the increased oil prices since they were oil exporters. Table 7.1 suggests that during the 1980s, only Japan among the HPAEs radically devalued its currency.

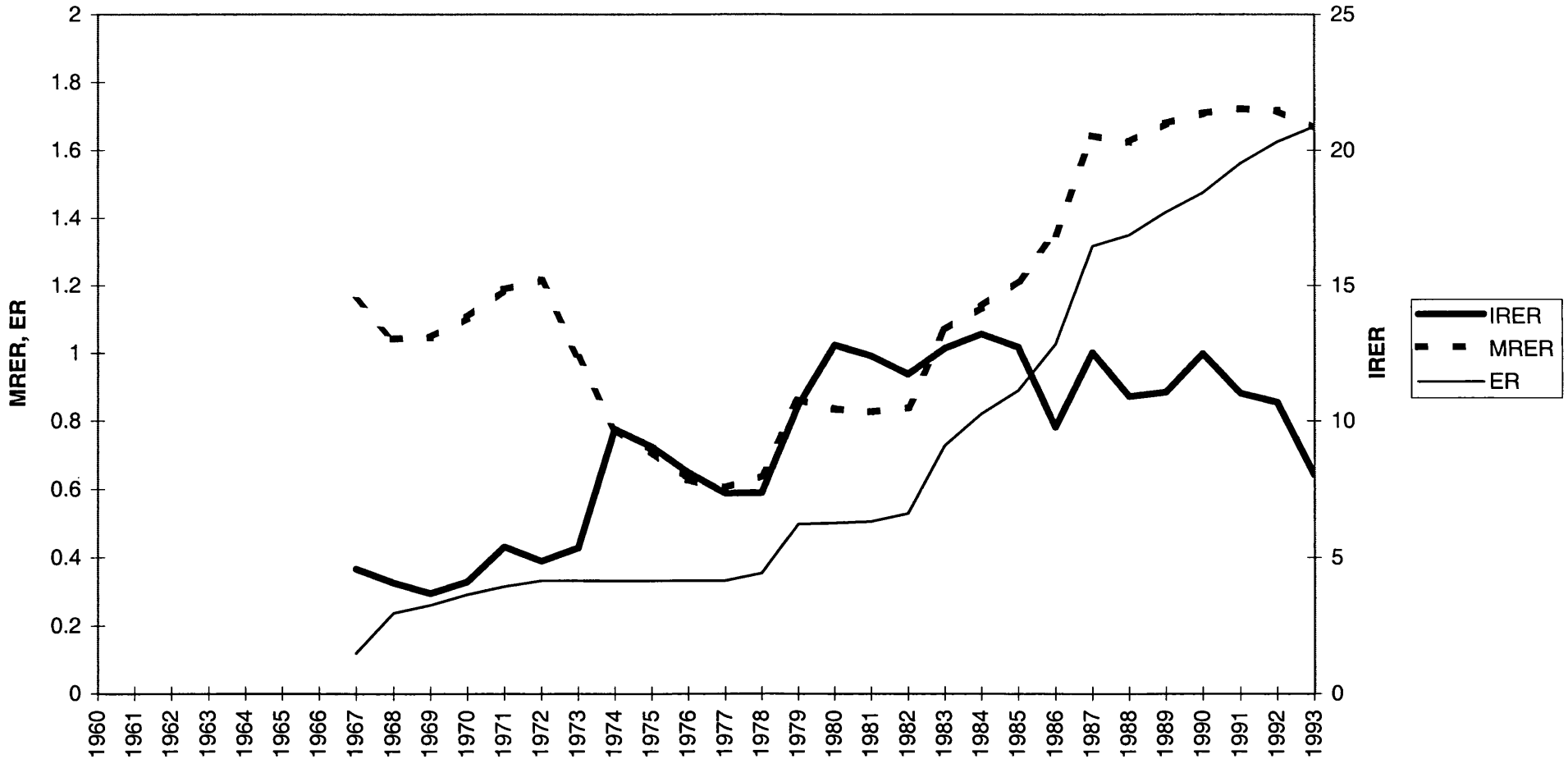
Table 7.1: Change in the nominal and real exchange rate

Figure 7.1-A: Korea



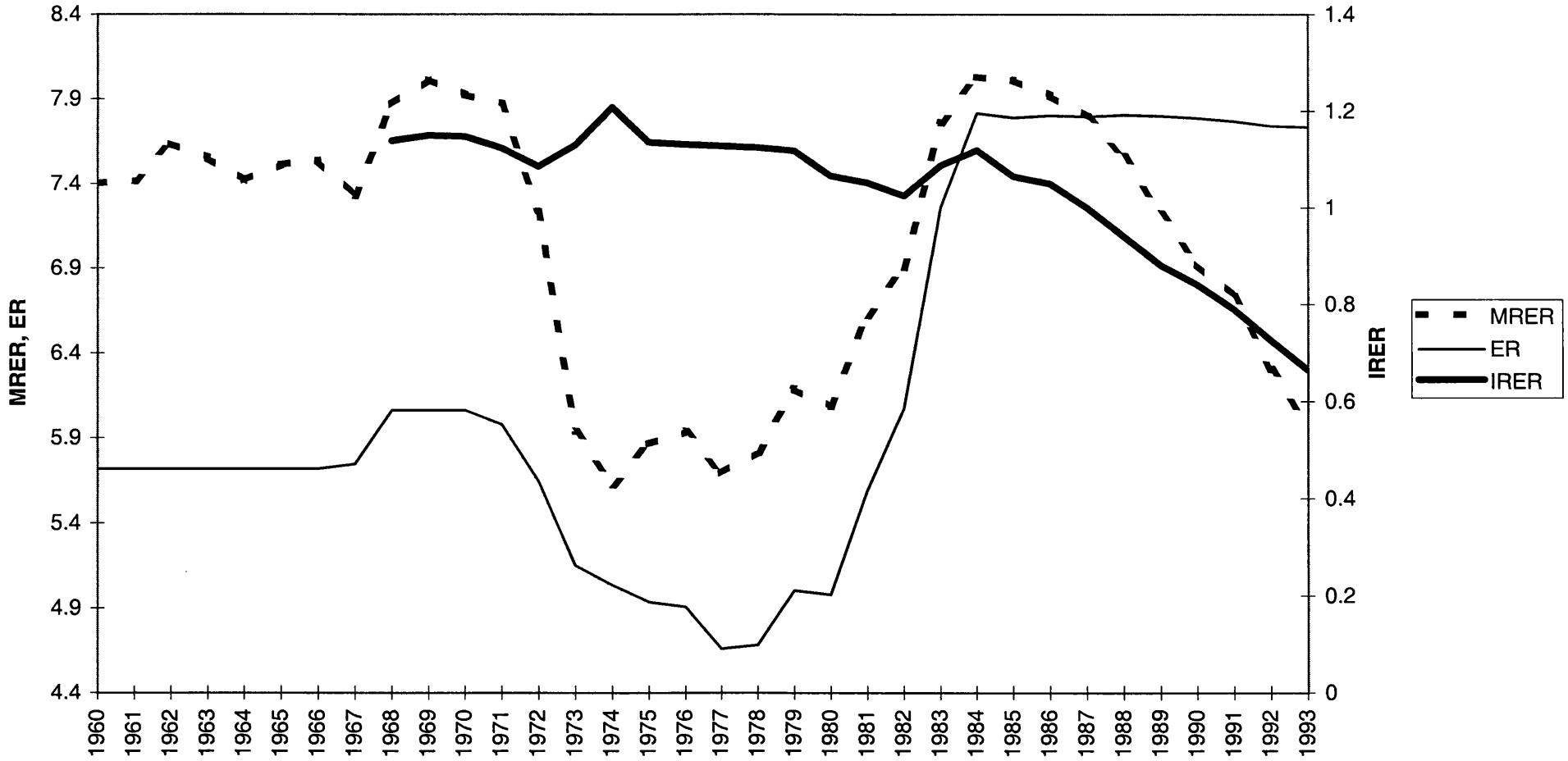
Source: Stars Database

Figure 7.1-B: Indonesia



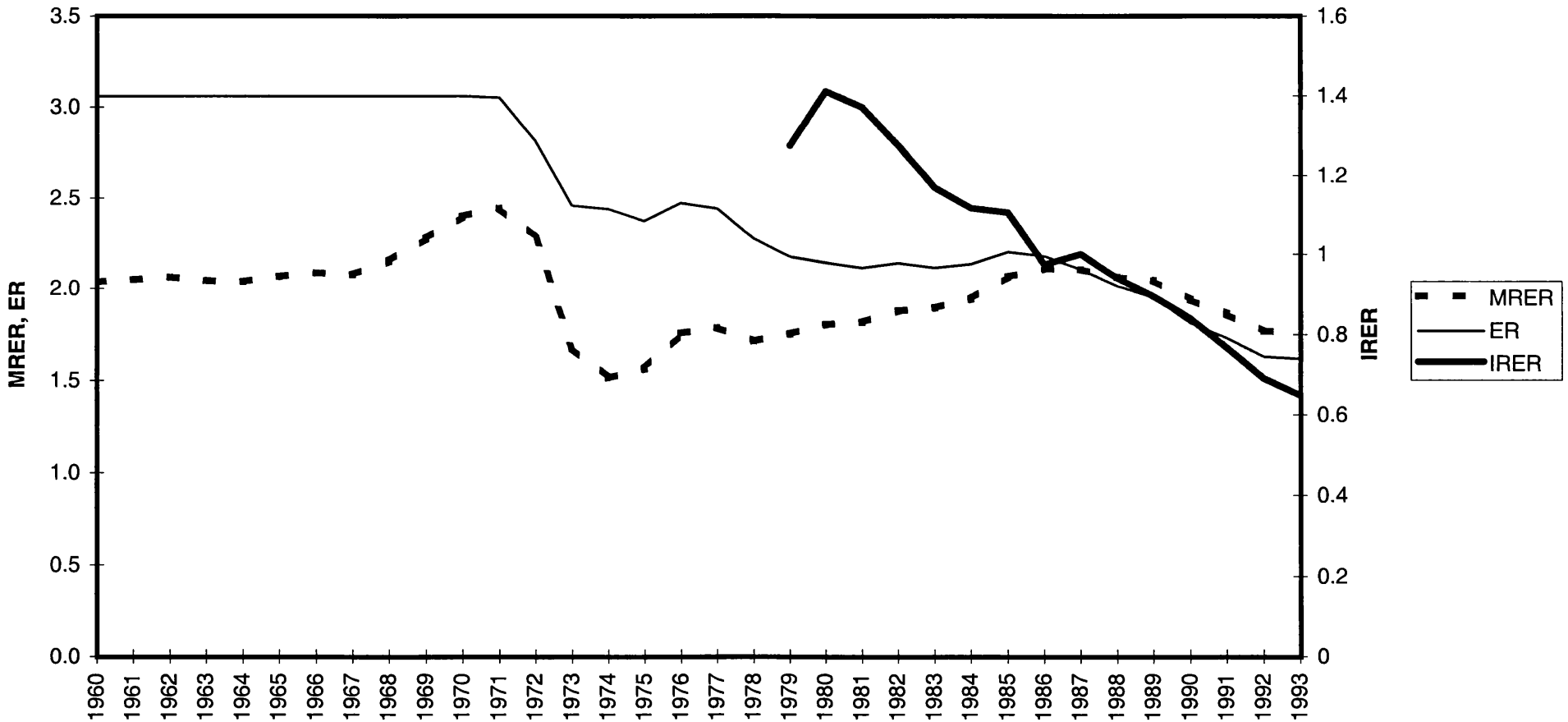
Source: Stars Database

Figure 7.1-C: Hong Kong



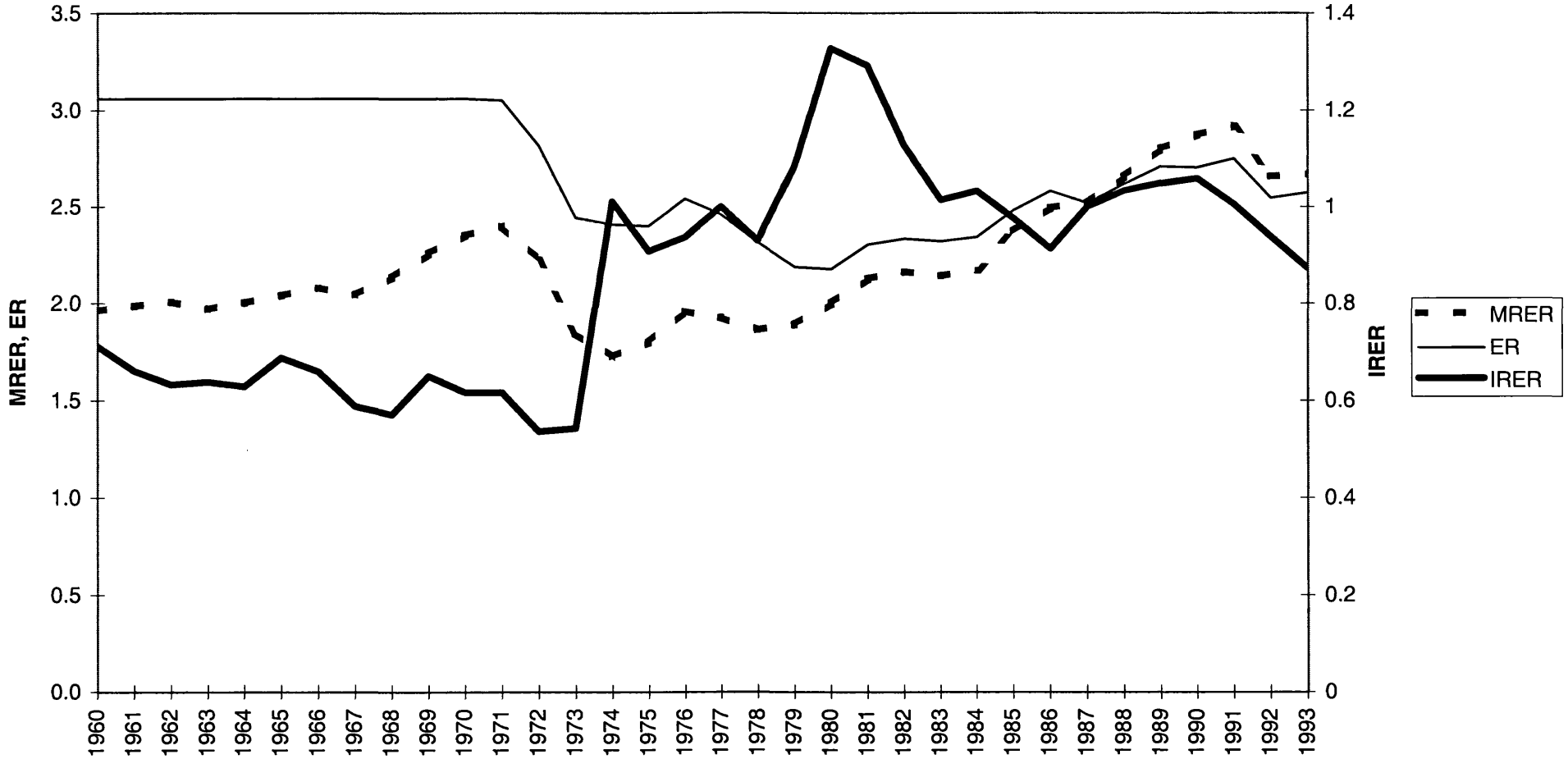
Source: Stars Database

Figure 7.1-D: Singapore



Source: Stars Database

Figure 7.1-E: Malaysia



Source: Stars Database

Figure 7.1-F: Thailand

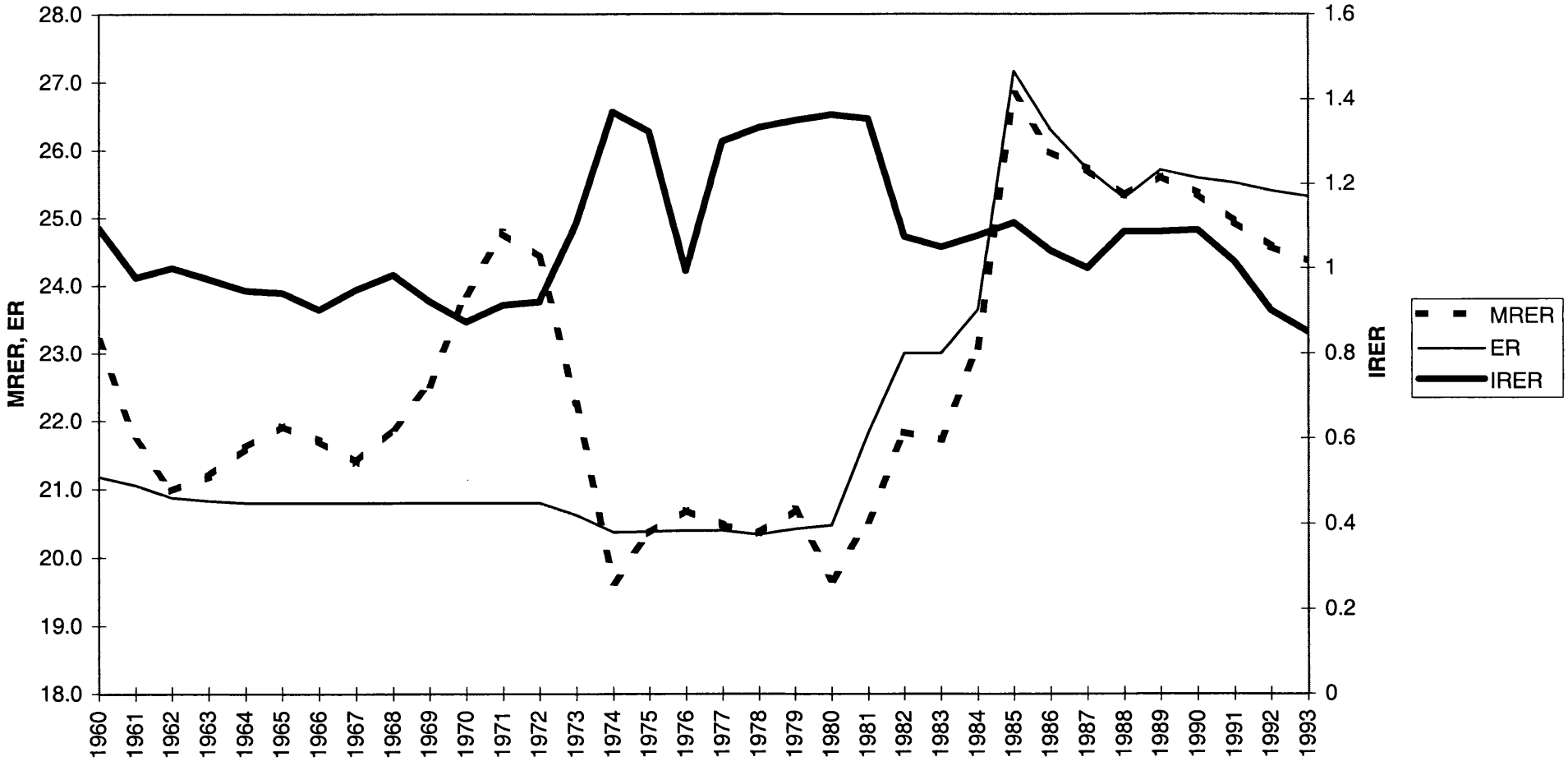
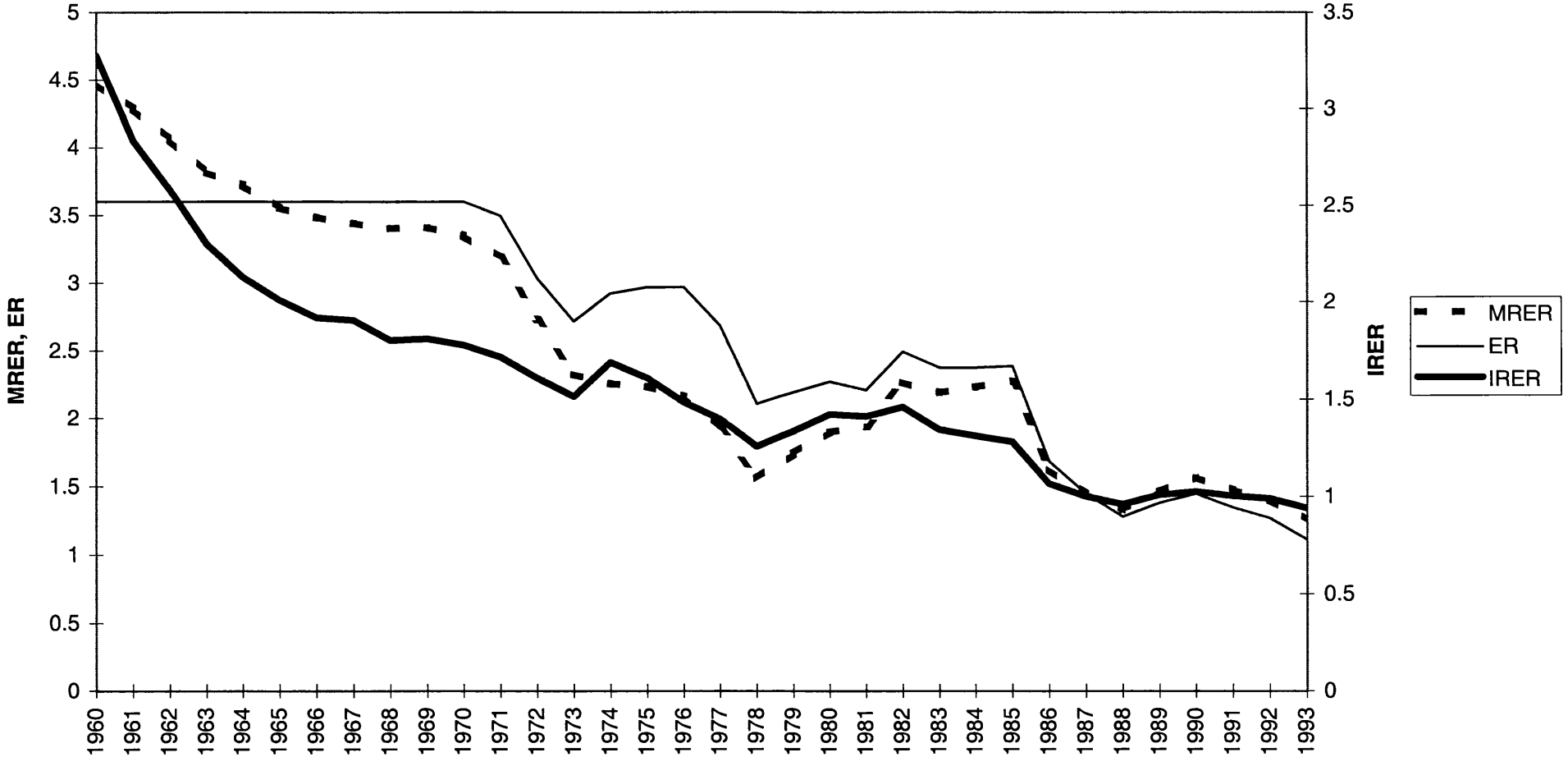


Figure 7.1-G: Japan



Source: Stars Database

During the same periods, the much criticised Latin American and African countries devalued their currencies more than the HPAEs. Interestingly, the Report specifically mentions Bolivia and Ghana as examples of countries that severely appreciated their currencies during the 1980s.[46] During this decade Bolivia was number 118 out of 122 countries and Ghana was ranked 119. This is particularly important when one considers that Bolivia was ranked sixth and 17th in the 1960s and 1970s and Ghana was ranked 17th and 26th respectively. However, the Report does not mention that both countries did much better in the 1980s in terms of their export performances compared to the 1970s. By export performance, Bolivia was ranked 35th in the 1980s (as opposed to 108th in the 1970s) and Ghana 56th (as opposed to 98th in the 1970s). Consequently, by looking at these figures, one cannot simply argue that their 'poor' export performances were the result of their overvalued exchange rates.

Table 7.2 supports the findings of the table 7.1. The relative real exchange rate devaluations of the HPAEs in terms of MRER are not particularly impressive. A comparison of table 7.2 with the table 7.1 reveals additional information about these two measures. The rank order of the African countries during the 1980s differ substantially. In terms of the MRER they ranked very high, but by the IRER they ranked very low. For example Zaire, Tanzania and Zambia ranked third, fourth and ninth according to MRER devaluations, whereas they are ranked 65th, 109th and 32nd according to IRER devaluations. This is probably as a result of a fall in the prices of their export commodities. As the international prices of exportables declined, they responded by devaluing their currencies. Even though the devaluations were substantial, they were unable to eliminate the fall in the relative price of exportables and the IRER declined.

[46] *Ibid.*, p. 114.

Table 7.1: Rank order of countries according to internal real exchange rate (IRER) devaluations and export growth rates (average rates across years)

	Rank order of countries according to IRER devaluations				Rank order of countries according to export growth rates		
HPAE	1960s	1970s	1980s		1960s	1970s	1980s
Japan	87	95	17		6	18	53
Hong Kong	NA	86	55		NA	12	8
Korea	36	68	53		4	3	12
Singapore	NA	NA	87		NA	NA	17
Taiwan	NA	NA	NA		NA	NA	NA
Indonesia	86	14	100		66	42	61
Malaysia	88	19	104		58	58	18
Thailand	84	43	68		50	11	10
Latin America							
Argentina	64	89	76		64	23	52
Bolivia	6	17	118		28	108	35
Brazil	21	60	96		54	21	37
Colombia	16	44	110		83	57	24
Peru	4	92	62		77	46	108
Africa							
Ghana	17	26	119		27	98	56
Tanzania	47	38	109		69	107	85
Zaire	3	103	65		87	83	48
Zambia	1	108	32		90	80	114
Number of countries	91	111	122		91	111	122

Source: World Bank Stars Database

Table 7.2: Rank order of countries according to multilateral real exchange rate (MRER) devaluations and export growth rates (average rates across years)

	Rank order of countries according to MRER devaluations				Rank order of countries according to export growth rates		
HPAE	1960s	1970s	1980s		1960s	1970s	1980s
Japan	67	87	103		1	18	44
Hong Kong	NA	47	73		NA	13	5
Korea	NA	26	90		NA	2	8
Singapore	NA	NA	86		NA	NA	12
Taiwan	NA	NA			NA	NA	
Indonesia	NA	35	13		NA	40	52
Malaysia	14	31	49		40	56	13
Thailand	31	37	59		32	12	6
Latin America							
Argentina	45	9	81		43	23	43
Bolivia	66	8	76		18	97	28
Brazil	51	11	102		35	21	30
Colombia	6	40	15		60	55	19
Peru	65	12	108		53	44	100
Africa							
Ghana	NA	59	35		NA	88	47
Tanzania	NA	60	4		NA	96	77
Zaire	NA	99	3		NA	76	40
Zambia	56	39	9		66	73	105
Number of countries	67	100	110		67	100	110

Source: World Bank Stars Database

Finally, table 7.3 provides a composite index of the IRER for Sub-Saharan Africa, Latin America and the HPAEs. The figures show that all three regions responded to the oil crises of the 1970s by substantially devaluing their currencies. During this period, the IRER depreciated more for Latin America than Sub-Saharan Africa and the HPAEs. During the 1980s, however, the IRER appreciated for Latin America and the HPAEs. For Sub-Saharan Africa, it continued to depreciate until 1990 and then appreciated. For Japan, however, the IRER as well as the MRER and the nominal exchange rate all appreciated. Overall, between 1968 and 1993 Sub-Saharan Africa had the highest level of depreciation compared to Latin America and HPAEs.

Table 7.3: Internal real exchange rate index (IRER), by region

	Sub-Saharan Africa	Latin America	HPAEs (without Japan)	HPAEs[47]	WORLD
1968	100	100	100	100	100
1975	108	187	149	101	125
1980	124	226	160	95	140
1985	116	207	142	83	120
1990	139	155	125	65	108
1993	126	120	105	54	94

Source: World Bank Stars Database

The above evidence is enough to reject the Report's assertion that the strong export performances of the HPAEs was derived from real exchange rate devaluations. There is no empirical evidence to suggest that they have used 'exchange rate protectionism' for competitive purposes. What is more interesting, however, is that the correlation between devaluation and export growth is not as clear as the World Bank asserts, either for the 1980s, 1970s or the 1960s. If the relationship between exchange rate devaluation and export performance was as clear as the World Bank believes, one would expect a positive correlation. The following simple regressions, however, reveal opposite results.

To see the correlation between real exchange rate devaluation and export performance, two separate regressions are estimated for different time periods. The

[47] Excludes Taiwan and Singapore due to lack of complete data.

first one is the change in the share of exports in total GDP against the IRER devaluation and the second is the export growth rate against the IRER devaluation.

Reg 1: $\Delta (X/GDP) = f(\Delta IRER)$

Reg 2: $\Delta (X) = f(\Delta IRER)$

where

$\Delta (X/GDP)$: change in the share of exports in total GDP

$\Delta (X)$: change in real exports.

$\Delta IRER$: change in IRER.

The results reported in table 7.4 are surprising and clearly show a strong negative correlation between export performance and devaluation. The significance level of this correlation first increases substantially during the 1970s, and then diminishes during the 1980s, but stays negative. This negative correlation need not be interpreted as evidence against devaluation. One cannot make the simple argument that exports decrease as a result of devaluation. They clearly demonstrate, however, that devaluations cannot guarantee good export performance. A possible interpretation of these results is that countries respond to external shocks by devaluating their currencies to slow down or to stop the negative impact of the shocks on their exports instead of using devaluation as a competitive tool. The higher significance level of the correlation for the 1970s (crisis years) compared to the 1960s and 1980s support this argument. This suggests that real exchange rate devaluation is usually a 'panic' response to fluctuations in exports rather than a reliable tool to increase exports and that the real exchange rate is determined by the changes in exports but not necessarily vice versa.

Table 7.4: Correlation between internal real exchange rate devaluation (IRER) and export performance

Time Period	Dept. Var.	Cons	IRER Deval.	R-Bar-Squ	DW	F-test & DF	Country dummies
1961-70	X/GDP	3.003 [6.510]*	-0.540 [-3.042]*	0.921	1.923	150.975* [83]	Algeria, Burkina Faso, Korea, Libya, Mauritania, Rwanda
1961-70	X gr	8.156 [16.355]*	-0.645 [-3.356]*	0.938	1.852	195.978* [83]	Algeria, Burkina Faso, Korea, Libya, Mauritania, Rwanda
1971-80	X/GDP	4.041 [5.885]*	-0.227 [-7.068]*	0.594	2.156	24.063* [103]	Guinea-Bissau, Korea, Niger, Panama, Tanzania, Togo
1971-80	X gr	7.685 [8.611]*	-0.179 [-4.288]*	0.412	2.065	12.024* [103]	Guinea-Bissau, Korea, Niger, Panama, Tanzania, Togo
1981-90	X/GDP	2.654 [7.076]*	-0.301 [-2.816]*	0.286	2.214	10.728* [116]	Benin, Comoros, Iran, Mozambique
1981-90	X gr	5.180 [10.443]*	-0.224 [-1.583]	0.190	2.135	6.692* [116]	Benin, Comoros, Iran, Mozambique

The Report also argued that HPAEs have been successful in maintaining stable exchange rates compared to some Latin American countries thanks to their 'pragmatic macroeconomic management.'[48] Table 7.5 shows the rank order of the countries according to their real exchange rate and export stability indices.[49] Even though the HPAEs seem to be in a better position in terms of exchange rate and export stability compared to Latin American and African countries, their performance is not particularly impressive.

[48] World Bank (1993: 115).

[49] Export stability is calculated by estimating the following simple regression:

Ln X = f (T) or (Ln X = a + bT), where X is exports in logarithmic form and T is time trend. Residuals from this regression were saved and their absolute values were divided with the fitted (estimates) values and summed $\Sigma|e/Y^{\wedge}|$ where e is residual and $Y^{\wedge}$ is fitted (estimate) value. This gives variability of the variable around the time trend.

Real exchange rate stability can be calculated in two ways. One is the simple coefficient of variation through time and the second is the above regression method. Here both methods are employed since some countries have clear trends in their exchange rates such as China, Chad, Guinea-Bissau, Sierra Leone and Singapore which make their exchange rate variation in terms of CoV very high. When this trend is removed, however, their exchange rates are more stable around this trend.

Table 7.5: Rank order of countries according to export and internal real exchange rate (IRER) stability. (1968-93)

HPAE	IRER stability (regression method)	IRER stability (CoV method)	Export stability		Latin America	IRER stability (regression method)	IRER stability (CoV method)	Export stability
Japan	10	53	21		Argentina	90	73	40
H. Kong	11	22	32		Bolivia	108	98	66
S. Korea	29	51	65		Brazil	62	48	25
Singapore	1	56	19		Colombia	70	55	61
Taiwan	NA	NA	NA		Peru	81	57	69
Indonesia	64	83	37		Africa			
Malaysia	57	60	52		Ghana	96	93	89
Thailand	47	27	41		Tanzania	86	100	85
					Zaire	73	72	88
No of Countries	109	109	109		Zambia	40	42	49

Note: Lower means stable, higher means unstable
Source: World Bank Stars Database

To analyse a possible relationship between IRER stability, export stability, GNP per capita and export growth, the following regressions were estimated for 108 countries.

1. IRER instability = f (Exports instability) + sig
2. IRER instability = f (GNP per capita) - sig
3. Exports instability = f (GNP per capita) - sig
4. Exports growth = f (ER instability) - sig
5. Exports growth = f (Exports instability) - not sig

The results suggest some interesting insights (see table 7.6). The first regression shows a positive correlation between IRER instability and export instability. The direction of causality is not obvious. The World Bank would probably argue for causality to run from IRER instability to export instability. However, given the earlier argument that the IRER devaluation is in general a panic response to export fluctuations, causality could run from export instability to IRER instability. The second and third regressions clarify this point. Both the IRER and export instability are negatively correlated with per capita GNP which suggests that fluctuations in export performance have to do with the development level and with the nature of the commodities produced by the countries. Exports and thus the IRER performance of developed countries are more

stable. Regressions 4 and 5 suggest that IRER instability and export instability are negatively correlated with export performance even though the latter is insignificant.

Table 7.6: Regressions on IRER instability, export instability, GNP per capita and export growth (1968-93)

	Dept. var.	Indept. Var.	Coefficient	Constant	R-Bar-Squ	DW	F-test & DF	Country dummies
1	IRER instability	Export instability	0.383 [7.002]*	0.019 [0.352]	0.309	1.924	49.038* [106]	
2	IRER instability	GNP pc	-0.165 [-4.788]*	1.455 [5.641]*	0.170	1.747	22.932* [106]	
3	Export instability	GNP pc	-0.385 [-9.316]*	3.408 [11.027]*	0.445	2.103	86.796* [106]	
4	Export growth	IRER instability	-0.237 [-3.678]*	2.234 [56.823]*	0.538	1.718	25.970* [102]	Trinidad & Tobago, Kuwait, Libya, Sierra Leone
5	Export growth	Export instability	-0.026 [-0.579]	2.196 [46.709]*	0.478	1.869	20.673* [102]	Trinidad & Tobago, Kuwait, Libya, Sierra Leone

* is one-percent significance level.

Finally, table 7.7 illustrates the results of a 'Granger causality test' for 41 countries between exports and the IRER for 26 years (1968-93).

Formulations for the Granger causality test are:

1. $X_t = \alpha + \beta.IRER_t + \beta_1.IRER_{t-1} + \beta_2.IRER_{t-2} + \beta_3.X_{t-1} + \beta_4.X_{t-2} + u$
2. $IRER_t = \alpha + \beta.X_t + \beta_1.X_{t-1} + \beta_2.X_{t-2} + \beta_3.IRER_{t-1} + \beta_4.IRER_{t-2} + u$

Summary of the Table 7.7

	Total		Significant total		Ten-percent sig		One-percent sig	
	-	+	-	+	-	+	-	+
Current	28	13	12	0	8	0	4	0
IRER ⇒ X	17	24	6	6	5	6	1	0
X ⇒ IRER	22	19	6	7	6	7	0	0

Table 7.7: Causality text for internal real exchange rate (IRER) and exports

	Argentina	Australia	Belgium	Brazil	Canada	Chile	China
Current	-	-	+	-	-	-	+
ER ⇒ X	+	-	-	-	-	+	+
X ⇒ ER	-	-	+	-	+	-	+

	Colombia	Denmark	France	Germany	Ghana	Greece	Guatemala
Current	-	+	+	+	-	-	-
ER ⇒ X	+	-	-	-	+	+	+
X ⇒ ER	+	+	+	+	+	-	-

	Hong Kong	Indonesia	Ireland	Italy	Japan	Kenya	Korea
Current	-	-	+	+	+	-	-
ER ⇒ X	+	-	-	+	+	+	+
X ⇒ ER	-	-	+	-	+	+	-

	Kuwait	Libya	Malaysia	Mexico	Nigeria	Peru	Philippines
Current	-	-	-	-	-	-	-
ER ⇒ X	-	+	-	+	-	+	-
X ⇒ ER	-	-	+	-	-	-	-

	Senegal	S. Africa	Sri Lanka	Sweden	Switzerland	Tanzania	Thailand
Current	-	-	-	+	-	-	-
ER ⇒ X	+	+	+	-	-	+	+
X ⇒ ER	+	+	-	+	-	+	-

	Turkey	UK	USA	Uruguay	Zaire	Zimbabwe	
Current	+	+	+	-	+	-	
ER ⇒ X	+	-	+	+	-	+	
X ⇒ ER	+	-	-	-	+	+	

Ten-percent significance level
One-percent significance level

If the Report's argument was correct, one would expect a positive correlation between current values of the IRER devaluations and the export growth. This would not prove causality. One would also expect a positive correlation between the past values of the IRER and the current values of export growth. The results are surprising. Out of 41 countries, only for 12 is there a significant correlation between the current values of the IRER devaluations and export growth. The coefficients, however, do not have the expected sign; they are all negative. Four of them have a significance level of one-percent. For almost all oil exporting countries a significant negative correlation is apparent. This suggests that the more these countries export the more their currencies appreciate. For these countries, causality cannot run from the exchange rate to exports, because a negative coefficient does not make any sense.

As to past values of the IRER, the story is contrary to the Report. For only 12 countries is there a causal relationship from exchange rates to exports. Only half of them have the expected sign. Out of 12 only Sweden exhibits strong causality at the one-percent level. The sign of the coefficient is not what the Report would predict. So the evidence seems to be against the Report's expectations. For 13 countries causality runs from exports to the exchange rate.

In summary, the Report's argument regarding the impact of exchange rate devaluations is unsubstantiated. There seems to be no strong correlation between real exchange rate devaluation and the export performance. When there is a strong correlation, causality seems to run from exports to exchange rates rather than vice versa. There is no empirical evidence to suggest that the HPAEs relied on exchange rate policies to stimulate exports. One needs to look elsewhere to find an explanation for success in stimulating exports.

7.3.2. Trade and trade policy

The Report admits that '[m]ost HPAEs began industrialisation with a protectionist orientation.'[50] It then argues that protectionism in these countries was lower compared to other developing countries, and they gradually moved toward free trade. The Report reviews the protectionist measures adopted by these countries. The evidence it

[50] World Bank (1993: 295).

presents for individual countries proves that the protectionist measures were very high at the beginning of their development period and declined gradually. As the Report perceives import-substitution and export-promotion strategies as alternatives, it does not see the naturalness of the move from protectionism to more liberal policies. This is despite its admission that in Japan the 'ERP levels in the machinery sector were reduced during the 1970s, only after it was evident from export performance that the sector had become internationally competitive.'[51] In this passage the Report summarises the typical expectations of import-substitution theorists. As is argued in chapter four, there is a dynamic relationship between import-substitution and export-promotion strategies. According to this view, countries should protect their domestic markets until they become competitive in international markets. When the competitiveness is secured however, there is no need to continue with the import-substitution. Import-substitution policies are usually designed as temporary policies to stimulate industrialisation and competitiveness. Even if the HPAEs had relatively lower protection rates, this would not prove causality. It makes more sense to explain the low level of protectionism with a competitive economy rather than to explain a competitive economy on the basis of a low level of protectionism.

The Report also argues that 'while these economies favoured production of import-substitutes, they did so less than most other developing countries.'[52] To prove this point, the Report compares the HPAEs with other regions in terms of 'nominal tariff rates adjusted for the presence of non-tariff barriers,' and domestic price distortions. The Report concludes that both indicators are lower for the HPAEs than other regions. The first measure is taken from Erzan, *et al.* (1989) and the second from Dollar (1990).

The most obvious problem with the first indicator is, as Perkins points out, '[t]he data used to support this proposition are for 1985, roughly a quarter century after rapid industrialisation began in the more interventionist states, and US pressure among other elements had forced these states to sharply reduce their level of intervention.'[53] Furthermore the difficulties of dealing with non-tariff barriers are well

[51] *Ibid.*
[52] *Ibid.*, p. 299.
[53] Perkins (1994: 659).

established in the literature. Non-tariff barriers are extremely difficult to calculate. Thus, the validity of these figures to support the Report's arguments is questionable.

The Dollar's index, which is based on a comparison of the price levels of countries, is criticised in chapter five, and will not be discussed in detail here. The index is derived from a certain theoretical approach on how prices are formed in national and international markets and once the basic assumption of this theory is rejected, Dollar's price distortion index loses its credibility.

Even if it is assumed that the Dollar index is a proper measure of trade liberalisation, as Perkins (1994: 659) argues, the Report's data do not support its conclusions. According to the Report 'Hong Kong, Malaysia and Singapore rank in the top two deciles of the index.'[54] which indicates a lower rate of effective protection. On the other hand 'surprisingly, Thailand, with higher effective protection, also is ranked in the top decile, while Indonesia is in the top third.'[55] This inconsistency is not surprising given the weaknesses of the Dollar index as a measure of trade liberalisation. The Report also admits that 'Japan, Korea, and Taiwan, China, rank in the fifth and sixth deciles, below such developing-economy comparators as Brazil, India, Mexico, Pakistan, and Venezuela.'[56] Nonetheless, on average, the HPAEs are ranked at the top of the list[57] above all developing and OECD countries thus indicating that they are relatively more 'liberal'.

The way in which the individual country figures are aggregated to create the regional figures is not clear. If simple averages are taken, the existence of two city-states, Hong Kong and Singapore, may substantially distort the picture. As Perkins argues '[o]ne problem with this World Bank study is that, despite its frequent mention of the diversity of the HPAEs experience, it keeps trying for generalisations that apply to all.'[58] The structural characteristics of the two city-states are fundamentally different from the others and this should be taken into account.

Moreover, even if these two indicators are technically accurate they fail to capture many other price distortions created by industrial policies. Dollar index at best measures the real exchange rate overvaluation but tells us nothing about the degree of

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[54] World Bank (1993: 301).
[55] *Ibid.*
[56] *Ibid.*
[57] Figure 6.4 in the Report.
[58] Perkins (1994: 658).

market distortion. The nominal tariff rates are not the only way to promote and protect domestic industries. The HPAEs used many other industrial policies to promote particular sectors such as investment subsidies, low interest rates, tax incentives, preferential allocation of foreign exchange, exemption from anti-monopoly laws, public investment in applied research, and wide sharing of information among the public and private sectors.

Given the strict industrial and trade policies of these countries, one may wonder what else could these countries have done to distort their prices in addition to what they already had done. As Lall (1994:650) argues,

> [t]here is a clear positive relationship within the group of HPAEs between the extent of industrial deepening and the degree of price distortions: the most successful industrialisers in Asia (and arguably in the world in recent experience) distorted their prices significantly.

In brief, the HPAEs did not adopt non-interventionist trade regimes during the period of their rapid penetration into world markets. On the contrary, they practiced export-promotion and selective import-substitution policies, which included subsidised credit, tax rebates, and a variety of incentives including such things as awards at public ceremonies for successful export performance.

7.4. EFFECTIVENESS OF INDUSTRIAL POLICY

The Report admits that, except for Hong Kong, all HPAEs employed industrial policies but it also asserts that 'industrial policies were largely ineffective'[59] for two reasons. First, the changes in the sectoral composition of output were largely market-conforming and industrial policy did not guide industrial development along paths that it would not have taken if it were guided by market forces. Second, the productivity change in the promoted sectors was not higher than in the others.

[59] World Bank (1993: 312). This argument is contradicted by the Report itself. For example, as Casse and Lall (1995: 97) observe, Box 3.3. in the Report titled "Samsung Industries Battle for the Microwave Market" admits that '[t]he government's Economic Development Board was a key player in Samsung's success.' (World Bank, 1993: 130)

These arguments, however, are contradicted by the Report itself. For example, as Cassen and Lall (1995: 97) observe, Box 3.3. in the Report titled "Samsung Industries Battle for the Microwave Market" admits that '[t]he government's Economic Development Board was a key player in Samsung's success.'[60] Moreover, as Chang (1995b: 104) points out, the Report at many points accepts theoretical cases for "selective" intervention. It accepts that certain "selective" interventions such as directed credit and export subsidies worked in some countries. However, it insists that industrial policy did not work. There is, however, a major inconsistency in this argument. If directed credit and an export push were the major instruments of industrial policy in these countries, how is it possible that industrial policy did not work? Before dealing with the empirical investigations of the Report, the logic of these investigations themselves can be criticised.

7.4.1. Industrial policy and structural change

The argument put forward by the Report on the structural change of exports, which is assumed to support comparative advantage theory, is little more than a simple empiricism. The fact that these countries moved from the production of labour-intensive commodities to capital-intensive ones does not necessarily prove the validity of comparative advantage theory.

As argued in chapter three, comparative advantage theory is not about an anticipation of the trade pattern but rather it involves promoting economic development through free trade policies and specialisation. It is the nature of development to move from labour-intensive to capital-intensive production and, in fact, a country cannot develop unless this transformation takes place. If development itself is identified by this structural transformation, defining this process as comparative advantage is tautological. The success of industrial policy can be judged in terms of its contribution to the speed of this transformation. When industrial policy is employed one should not expect a country to jump stages, but to move quickly to capital-intensive industries. The Report assumes that this transformation will take place automatically as a result of free market policies in line with comparative advantage.

[60] World Bank (1993: 130).

Then, it compares this hypothetical case with industrial policy to see if the industrial policy created another pattern of development. In the absence of an example of market-based industrialisation, one should be more curious about whether the free market forces could produce an alternative path to that provided by industrial policies.

In this context, the Report's argument can be criticised from two perspectives. First, even if one accepts the Report's argument, the issue is not whether industrial policy can create a non 'market-conforming' pattern, but which policy can bring better and faster results. Second, instead of comparing the results of industrial policy with the hypothetical results of the free market economy, one could easily reverse the logic and discuss whether the same results could have been achieved had these countries followed free market policies.

Industrial structure

The Report asserts that '[t]he cross-economy comparisons of industrial structure raise questions about the efficacy of government efforts to promote or discourage specific sectors.'[61] This argument compares the 'actual and predicted'[62] shares of each sector in total manufacturing value-added. The results show that in Korea, given its level of economic development, two sectors, metal products/machinery (MPM) and textiles/clothing, had a relatively larger size than expected. By taking the size of textiles and clothing as an example, the report argues that industrial policy, aimed at moving from labour-intensive to capital-intensive industries, must have failed.

> In Korea, for example, despite the government's extensive efforts to speed the private sector's shift from labour-intensive to capital- and technology-intensive industries, the relatively labour-intensive textiles and garments sector was nearly three times bigger than international norms predicted in 1988, a substantial increase relative to international norms from 1968. (World Bank, 1993: 312-313)

[61] *Ibid.* p. 312-313.
[62] Which is obtained from cross-country regressions similar to that of Hollis-Chenery. See World Bank (1993) for details of the 'actual/predicted' values of industrial sectors.

The Report also argues that the increase in the 'actual/predicted' value for the MPM is very modest. Indeed, table 6.15 in the Report shows that the ratio of the 'actual/predicted' share of textiles increased from 1.75 in 1968 to 2.74 in 1988 and the same ratio for the MPM increased from 2.07 to 2.76. The question, of course, involves the validity of this test to prove that industrial policy has been ineffective in Korea.

The first and most obvious criticism is that in reality the textiles industry was one of the most heavily promoted industries and 'the fact that Korea has an 'exceptionally large' textile and clothing industry is not proof that industrial policy did not work but in fact suggests that it worked well.'[63] Furthermore as Rodrik (1994: 29) points out, to examine only broad groupings of industries as represented by the standard two-digit classification codes is a little problematical since 'this level of aggregation may be too coarse to discern much of the intended structural change. Many subsectors within the broader textiles industry are certainly capital and technology intensive.'

Second, as argued earlier, there is no reason to believe that promotion of capital-intensive sectors will reduce the importance of labour-intensive sectors. In Korea, 'industrial policy was not intended to suppress existing activities and some policies tried to upgrade technologies within mature sectors.'[64] Furthermore the argument is that as development takes place, the relative share of the labour-intensive industries *in general* declines, but *not* the share of *each* labour-intensive industry. There is no reason why an internationally competitive sector should diminish in relative importance just because it is labour-intensive. If the researchers of the Report looked at other labour-intensive commodities such as food, beverages and tobacco; wood and wood products; paper and printing, they would see a substantial fall in the 'actual/predicted' ratio of their share in total manufacturing. World Bank researchers were very selective in highlighting the items that would support their argument.

Third, table 6.14 in the Report shows that the share of textiles in total manufacturing value-added fell from 19 percent in 1968[65] to 15 percent in 1988. Our calculation in table 7.8 shows a more drastic fall, from 17.2 percent in 1973 to 6.5 percent in 1994, the largest among all the sectors. On the other hand, the same World

[63] Chang (1995: 214) see also Chang (1993) and Rodrik (1994: 29).
[64] Lall (1994: 651).
[65] The table reads as 1986. There seems to be a printing mistake.

Bank table shows a remarkable threefold increase for the share of MPM from 13 percent to 36 percent. Our table also supports this expansion. The increase in the share of MPM is remarkable even though the Report undervalues it by looking at a relatively modest increase in the 'actual/predicted' ratio for MPM from 2.07 in 1968 to 2.76 in 1988. This is obviously just an illusion. If MPM is the leading sector and the Korean economy grew very fast because of the increased share of MPM, and if the richer the economy, the higher the expected share of this sector, this would reduce the relative importance of it. The Report argues that as per capita income increased, similar structural change could have also been achieved through free market policies. However, as Wade (1994) argues, it is not clear whether income could have risen at the same speed without industrial policies. It is not clear if the promoted sectors could have grown as fast as they did. The same illusion is also true for the textiles sector. It is not that the importance of the textile sector increased but it increased relatively since it did not decline according to expectations. If a donkey is running faster and faster to reach the carrot, the fact that the distance of the carrot to the donkey is the same does not mean that carrot as an incentive does not work.

Fourth, if the Report's researchers had been less selective in highlighting the facts that the tables produce, they would not have failed to notice the incredible increase in the 'actual/predicted' share ratio of textiles in Hong Kong from 10.31 in 1973 to 118.95 in 1988. If Hong Kong is a free market economy, as opposed to Korea where industrial policies had been adopted, how could one explain this drastic increase? Does this prove the effectiveness of the free market economy and comparative advantage theory? How one can account for the apparent decline in the same ratio for the MPM sector from 2.86 to 1.96 in Hong Kong during the same period?

When the Report points out an increase in the same ratio from 2.14 in 1973 to 11.32 in 1989 for textiles and a decrease from 12.56 to 5.1 for MPM in Singapore, it contradicts its earlier argument that after Hong Kong, Singapore is the least protectionist country among the HPAEs.[66] If comparative advantage theory holds and if these two countries adopted relatively liberal trade policies, one would expect a

[66] World Bank (1993: 298).

Table 7.8: Share of sector value added in total value added in South Korea, actual and change through time.

	1973	1994	Change 1973-94
Machinery electrical	6.6	14.9	8.2
Machinery except electrical	2.3	8.9	6.6
Transport equipment	4.4	10.6	6.2
Fabricated metal products	2.3	5.6	3.3
Plastic	1.5	4.2	2.7
Printing & publishing	1.6	2.9	1.2
Furniture	0.2	1.1	0.9
Other chemicals	3.9	4.7	0.8
Footwear	0.3	1.0	0.6
Food manufacturing	6.2	6.5	0.3
Glass	0.7	1.0	0.3
Professional & scientific equipt	0.6	0.9	0.2
Non-ferrous metals	0.8	1.1	0.2
Leather	0.7	0.8	0.1
Pottery	0.2	0.3	0.1
Wearing apparel, except footwear	3.5	3.4	-0.2
Other non-metallic minerals	4.2	4.0	-0.2
Paper	2.8	2.3	-0.5
Industrial chemicals	4.6	3.8	-0.8
Other manufactured products	2.2	1.4	-0.8
Iron & steel	6.7	5.8	-0.9
Rubber	2.1	1.1	-1.0
Miscellaneous prod. of petr & coal	1.9	0.4	-1.5
Petroleum refineries	6.0	2.7	-3.3
Wood	4.4	0.9	-3.5
Tobacco	6.0	1.8	-4.3
Beverage	5.9	1.6	-4.3
Textiles	17.2	6.5	-10.7

Source: UNIDO Database (INSTAT 3)

decline in the share of textiles and an increase in the share of MPM as development takes place.

Finally, as Lall (1994) and Wade (1994) argue, the comparisons based on Chenery-Syrquin norms may be misleading because they reflect the promotion efforts of other countries such as India, Brazil, and Argentina. The researchers of the Report needed to be more convincing if they wanted to argue that industrial policy in Korea has been ineffective.

Predicting the pattern of sectoral growth

To substantiate its argument that industrial policy has been ineffective in the HPAEs, the Report estimates simple regressions between relative growth rates of each industrial sector and two measures of factor endowment. The Report aims to test whether the sectoral evolution of the HPAEs has differed from a hypothetical case of neutral policies. If it can be proven that actual industrial structural change has followed a pattern similar to what could be predicted by the hypothetical case of comparative advantage theory, it could be argued that (the Report believes) industrial policies were ineffective. The simple Heckscher-Ohlin version of comparative advantage theory argues that for low-income countries, those sectors that have a lower capital-labour ratio are natural candidates for growth. Thus, if one can prove that in the HPAE the low capital-labour sectors have grown faster than the others, then one can claim that industrial policies have failed in their objectives.

In order to prove its argument, the Report estimates the following simple regressions:

$v^*_i = f(x_i)$

where

v^*_i : change in the current price share of value-added in sector 'i', relative to value added in all manufacturing.

x_i : wage per worker at the beginning, w_b, or end of the period, w_e, or value-added per worker at the beginning or end of the period, va_b or va_e.

The Report argues,

> In competitive labour markets, the wage per worker should measure the skill intensity of workers in each sector. Value-added per worker should reflect both skill and capital intensity and is a proxy for technological complexity. [...] Wage per worker may be translated as "good jobs," while value-added per worker is a natural measure of "high productivity." (World Bank, 1993: 330)

Thus both measures are assumed to measure the capital-labour ratio. It is argued that if there is a negative (positive) correlation between the dependent variable (v^*) and the independent variables at the beginning of the time period (w_b, va_b), this would show that low (high) capital-labour sectors have grown faster (slower) than the others. If there is a negative (positive) correlation between the dependent variable (v^*) and the independent variables at the end of the time period (w_e, va_e), this would show that the sectors that expanded display a low (high) capital-labour ratio. By using two-digit ISIC classifications of industrial sectors, these regressions were estimated for Hong Kong, Japan, Korea, Singapore and Taiwan. Table 7.9 summarises the results of the Report's regressions.[67]

The Report focuses on Korea because the other countries disprove the Report's hypothesis. Except in Korea, the sign of the coefficients are nowhere negative and significant. Moreover, the positive coefficients outnumber the negative coefficients in Hong Kong, Japan and Singapore. Thus, whatever the theoretical and empirical validity of this simple exercise, the results are disappointing for the Report's researchers. Despite the results, the researchers do not drop or modify their arguments. Even for Singapore where the coefficients have positive signs, the Report first accepts that 'for the period 1980-89, output grew more rapidly in more capital- and knowledge-intensive sectors, supporting the view that the Singaporean authorities

[67] Table A6.2 in the Report.

successfully intervened to encourage increasingly capital-intensive development.'[68] Then the researchers attempt to deny the results of the table by arguing that 'given the rapid growth in the capital-labour ratio in Singapore, this result also conforms to factor proportions theory predictions.'[69] This argument cannot be won against the World Bank. If the coefficients are negative, the results are market conforming. If they are positive they still conform to the predictions of the factor proportions theory! By concentrating on the only country, which seems to support their argument, the researchers continued to argue that developments in these countries are proven to be 'market conforming'.

A total of six critiques can be directed at this empirical test. First, the problems associated with using wages and per capita value-added to measure factor intensity are well documented in the literature. In the case of market imperfections (both labour and commodity), neither state intervention nor real exchange rate devaluations, can be good indicators of factor intensity. This is particularly true for Korea[70] and Taiwan where repressive labour systems were created by authoritarian and militarised regimes.[71] Thus it is not surprising to see that the coefficients of the regressions are negative for these countries.

Second, to measure factor intensity with those indicators that presume perfectly competitive markets, and then to use them to test whether the evolution of the sectors is market conforming is a contradiction. If the markets are not perfectly competitive, the indicators are not reliable. If the markets are perfectly competitive, there is nothing to confirm.

Third, as Chang (1995b: 105) points out, focussing at the 2-digit level is misleading, since many industrial policy measures were targeted at lower levels. Moreover, the promoted industries were not identified by a single criteria like capital intensity or the value-added component.

Fourth, a similar regression shows that not only wages and value-added but also profits are lower in the fast-growing sectors (see table 7.10). This suggests that

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[68] World Bank (1993: 314). Singapore as the 'second most' liberal economy after Hong Kong among the HPAEs obviously poses serious problems for World Bank arguments.
[69] *Ibid.* p. 315.
[70] To be able to compete in international markets, Korea suppressed wages particularly in exporting sectors which happen to be the fastest growing sectors.

Table 7.9: Signs of regressions explaining change in value-added share of sectors (World Bank results)

Economy	Period	W_B	W_E	V_B	V_E
Hong Kong	1973-80	–	+	–	+
	1980-88	+	+	+	+
	1973-88	–	+	–	+
Japan	1953-63	–	–	–	–
	1963-73	+	+	+	+
	1973-80	–	+	–	+
	1980-89	+	+	+	+
S. Korea	1968-73	–	–	–	+
	1973-80	–**	–	–***	–
	1980-88	–	–	–**	–
	1973-88	–	–	–***	–**
Singapore	1969-73	–	–	–	+
	1980-89	+	+**	+	+*
	1973-89	+	+	+	+*
Taiwan	1966-86	–	–	–	–

+ and – signs are sign of coefficient.
* Significant at ten-percent level
** Significant at five-percent level
*** Significant at one-percent level
Note: $W_{B(E)}$ = Wage per employee at the beginning (end) of the period. $V_{B(E)}$ = Value added per worker at the beginning (end) of the period.
Source: World Bank, 1993, p. 332

Table 7.10: Signs of regressions explaining change in value-added share of sectors, for Korea

Economy	Period	Π_B	Π_E	Π/L_B	Π/L_E
S. Korea	1968-73	–	+	+	+
	1973-80	–***	–*	–***	–***
	1980-88	–***	–***	–***	–***
	1973-88	–***	–***	–***	–***

+ and – signs are sign of coefficient.
* Significant at ten-percent level
** Significant at five-percent level
*** Significant at one-percent level
Note1: $\Pi_{B(E)}$ = Profit rate at the beginning (end) of the period. Profit rate is the ratio of total profits to sum of total cost (wage and non-wage cost). $\Pi/L_{B(E)}$ = Profit per worker at the beginning (end) of the period.
Note 2: Number of dummy variables are used to remove normality problems. Even though with dummy variables the coefficients become more significant, with dummies they stay negative.
Source: UNIDO Database (INSTAT 3)

[71] Henderson and Appelbaum (1992: 17).

the Report's previous argument that Korea used undervalued exchange rates to promote exports cannot be true. If Korea used undervalued exchange rates to promote exports, fast growing sectors (these are mainly exporting sectors) would be as profitable as, if not more profitable, than the others. However, according to comparative advantage theory, in developing countries profitability in labour-intensive sectors must be higher.

Fifth, as Lall (1994: 649) argues, the aim of industrial policy is not simply to move from labour- to capital-intensive activities. As argued earlier, many modern sectors have relatively lower capital-labour ratios. Table 7.11 shows the capital-labour ratios of major industrial sectors relative to the industrial sector as a whole in Korea, Colombia, Pakistan and South Africa. In Korea, fast-growing sectors indeed have a relatively low capital-labour ratio. But evidence in table 7.11 suggests that many modern sectors have lower than average capital-labour ratios. Even if it is true that in Korea low capital-labour ratio sectors have grown faster this does not mean that industrial policies did not work. The aim of industrial policy is not necessarily to increase the share of those sectors that have higher capital-labour ratios but to increase the shares of the sectors that have more market opportunities such as modern technologies. As Yanagihara (1994: 667) also points out, if in Korea the MPM sector is the only sector that substantially increases its share in total industrial production, and if the labour-intensive sectors grow faster than the others, this can only mean that the MPM sector is labour-intensive.

Table 7.11: Capital-labour ratios of sectors relative to overall industrial sector.

	Korea (1990)	Colombia (1989)	Pakistan (1988)	S. Africa (1989)
Machinery electrical	79	73	48	55
Machinery except electrical	77	37	63	39
Transport equipment	139	82	46	66
Fabricated metal products	78	53	37	32
Plastic	90	108	57	39
Printing & publishing	70	77	46	39

Source: Letteri and Weeks (1994)
Note: Capital-labour ratio for overall industrial sector is 100.

Sixth, Kwon (1994) argues that the Report's claims that in Korea many of the promoted sectors are not capital-intensive and that the most rapid growth in sectoral shares of value-added occurred in lower wage or lower value-added per worker are erroneous. Table 7.3 in his article shows that

> not only the rapid growth of the capital labour ratio (K/L) but also the striking difference of the ratio between light and heavy industries. It also shows that the K/L ratios in government-promoted heavy industries, such as chemicals, iron and steel, machinery, and equipment, are considerably higher then the average for heavy manufacturing. (Kwon, 1994: 638)

The same table also shows that in 1989 the value-added per worker for heavy industries was 1.6 times larger and the wage rate was 26 percent higher than that for light manufacturing.

7.4.2. Industrial policy and productivity

The report puts interventionist policies into three categories: 1. promotion of specific industries; 2. mild financial repression combined with directed credit; and 3. export push. The Report admits that,

> [d]uring their heavy and chemical industries programs, Japan and Korea were the most active HPAEs, in promoting individual industries and sectors. Singapore and Taiwan, China, have also actively provided incentives for the technological upgrading. Malaysia had an HCI program reminiscent of Japan's and Korea's, while Indonesia has attempted to leadfrog from labour-intensive manufacturing to high-technology industries such as aircraft and electronics. (World Bank, 1993: 293)

The report further accepts that 'mild' financial repression and directed credit have been partially successful. However, it then contradicts itself by arguing that 'government efforts to promote specific industries generally did not increase economywide

productivity.'[72] The Report later contradicts itself once more by arguing that 'broad government support for exports was a highly effective way of enhancing absorption of international best-practice technology, thus boosting productivity and output growth.'[73] All these contradictory assertions make it hard to understand what the Report actually advocates. As Rodrik argues,

> to say that directed credit and export-push policies worked, whereas promotion of specific industries did not, is a logical inconsistency of major proportions. [...] Where was credit directed, if not to specific industries? Whose exports were pushed, if not those of exportable-goods industries? And how is it possible to judge selective industrial policies a failure if at the same time directed credit and export-push policies were successful? (Rodrik, 1994: 28)

The report also provides empirical evidence to suggest that total factor productivity growth in the promoted sectors was not higher than in the non-promoted sectors in the HPAEs (except in Japan) which proves that selective intervention did not work. This argument, however, is misleading for several reasons. First, as Chang argues,

> TFP studies are subject to massive problems of specification (i.e., assumptions regarding production functions), measurement (measuring capital stock, adjusting for improved quality of labour), and interpretation (it is a statistical "residual", which includes a large component of our "ignorance"). (Chang, 1995b: 105)

Second, the Report compares the non-comparables. Theoretically, it is not obvious why productivity should increase faster in promoted industries than in others. Total factor productivity in different sectors may grow differently because of the nature of the industries. The relevant benchmark is either 'what the TFP performance of the promoted industry itself would have been in the absence of intervention'[74] or the

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[72] World Bank (1993: 293).
[73] *Ibid.*
[74] Rodrik (1994: 32).

comparative performance of the promoted industries in other developing countries.[75] The government may also promote the weaker sectors. There is abundant literature on the government's incentives to support and subsidise strategic, infant or declining industries.[76] Targeting weaker sectors may increase the performance of these sectors even though they may not perform as good as the others. In this case, even though productivity growth in the promoted sectors will appear slower than in the others, in the absence of promotion, they may perform even worse. The same argument is also true for the relative importance of the labour- and capital-intensive sectors in the economy. As long as there are market opportunities, labour- as well as capital-intensive sectors can both be promoted.

Third, market opportunities must be taken into consideration because good industrial policy should be based on an anticipation of those sectors that have income-elastic demand and wider international markets. From this perspective, it is important to note that as long as market opportunities exist, the promotion of an industry is not necessarily linked to whether the supported industries are labour- or capital-intensive.

Fourth, the Report's argument contradicts the basic principles of comparative advantage theory. According to the theory, what is important is the relative – not the absolute – productivity increase of the sectors. A country might have a comparative advantage in one industry or sector even though productivity is growing faster in another. Even if free market policies are adopted, productivity might grow faster in sectors for which a country has no comparative advantage. For example, productivity increase in agriculture might be slower than in industry but the theory insists that labour-abundant low-income countries should specialise in agricultural products. In this sense, if comparative advantage theory cannot be criticised by comparing productivity increase in different sectors, then industrial policy should also not be criticised.

Fifth, the high level of aggregation at the two-digit sector level may be problematical and may not capture spillover effects.[77] As Lall (1994: 651) notes, '[i]t cannot capture the productivity effects of upgrading within activities or across technologically distinct activities.'

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[75] Rodrik (1994: 32) and Wade (1994: 60).
[76] Page (1994: 615).
[77] Rodrik (1994: 32), Wade (1994: 62).

Sixth, as Lall (1994), Wade (1994) and Chang (1995b) point out, the choice of time period can be critical to the outcome of the analysis since 'higher TFP figures may simply show that the sectors concerned were behind others at the start. Differences in total factor productivity may also reflect different periods of maturity of different activities.'[78] Wade argues that if the Report choose 1975-1990 period instead of 1965-1985 for Korea, the results could have been more favourable to the promoted sectors as many of the promoted sectors were promoted after the mid-1970s and by 1985 many were still suffering from the recession of the early 1980s. Furthermore, Chang argues that during the first half of the period covered, many "promoted" industries (e.g., iron and steel, shipbuilding, semiconductors) were not actually promoted – in fact did not even exist in their present form. When several years for maturation are allowed, the period covered becomes almost irrelevant.

Seventh, a simple comparison of different sectors ignores externalities. As Wade argues,

> assistance given to one industry may spill over from one industry to another, in a way that escapes the "outcome" measures. The Japanese government subsidised upstream infrastructural industries like steel and oil-refining as a way of facilitating the growth of downstream consumer products. But slower growth of more subsidised infrastructural industries, and faster growth of less (directly) subsidised consumer products, hardly attests to the "failure" of the targeted measures. (Wade, 1995: 108)

Finally, the report's argument can also be challenged empirically. The report simply compares the changes in the total factor productivity for promoted and unpromoted sectors and concludes that industrial policy did not meet its productivity-enhancing objective, except for Japan. As Wade notes,

> The measurement of TFP in general depends critically on the assumptions about the production functions, the choice of output measure (value-added versus gross output), the use of capital stock versus flows of capital services,

[78] Lall (1994: 651)

> the quality of inputs, cyclical smoothing, the time period studies, and so on. Different assumptions yield radically different results. (Wade, 1994: 61)

The Report estimated total factor productivity by using a neoclassical Cobb-Douglas production function which is based on number of assumptions such as constant returns to scale and perfect competition. The so-called recent 'new growth theories' emphasise non-constant scale economies particularly for fast-growing newly industrialised economies. Using an alternative technique, Park and Kwon (1993) estimated total factor productivity for Korea and found that in fact the TFP grew faster in the promoted sectors than the unpromoted ones.[79]

7.5. CONCLUSION

The aim of this chapter was to criticise the World Bank's 'East Asian Miracle' report and display the weaknesses of its arguments. It has been argued that the Report's theoretical arguments are weak while its empirical works are biased, selective, inadequate and contradictory. In most cases its conclusions do not follow from the evidence produced. In this sense it is hard not to feel disappointed[80] with it. Why was the World Bank so persistent in the defence of its corner at the expense of the credibility of the report it produced? The answer is an obvious one. As Lall rightly points out,

> had the study found that selectivity was necessary for, or even conducive to, industrialisation of the sort witnessed in East Asia, the foundations of much of its recent policy work and adjustment programs would have been shaken. The implications for the Bank would have been enormous. (Lall, 1994: 646)

It is the stand of this paper that the Report has a clear ideological mission: it aims to discredit industrial policy as a viable policy option and defend the structural adjustment policies produced and vigorously implemented in many developing countries. The changes in World Bank policies, which led to the so-called 'Post-Washington

[79] Kwon (1994: 637-638).
[80] Cassen and Lall (1995: 97).

Consensus', can be traced back to the East Asian Miracle Report. The Report, on the one hand, recognises the use of heavy state involvement and implementation of industrial policies in these countries and, on the other hand, paradoxically denies that industrial policies were effective. The Report's desperate efforts to deny the role of the state and industrial policies should be interpreted as a last attempt to justify the previous World Bank policies as well as to prepare the ground for a transition to less 'anti-state' policies. In this sense the report marks a historical change. The publication of the *World Development Report* (1997) signifies the transition from an anti-market stance to a 'market-conforming' and finally to a 'market-friendly' approach. Wade (1996) produces an incredible insight into the motivations of the Report and its ideological mission. He argues that the Report 'reflects an attempt at compromise between the well established World Bank view and the newly-powerful Japanese view.'[81] In this sense the Report's value lies in its historical significance rather than its scientific or analytical content.

The debate over the success of the HPAEs will continue. Even though the causes of the 'miracle' are complex and the recent financial crisis has undermined the belief in their success, there is a lot to learn from the experiences of these cases for other developing countries. Development is a complex and uneven process and there are no magical solutions to the vast problems of many developing countries. One thing is clear, however: to leave everything to market forces and to deny the role of the state in the development process is not part of the solution, on the contrary, it is the part of the problem. The experiences of these countries clearly show that an active industrial policy can produce results. A 'developmental state' can bring development. The composition of a developmental state, however is a matter of debate that requires additional research.

[81] Wade (1996: 5).

CHAPTER EIGHT

CONCLUSION

The primary objective of this thesis was to investigate the theoretical and empirical validity of the export-led development and trade liberalisation hypothesis. This chapter first reviews the findings of the thesis chapter by chapter. Then, it provides an alternative interpretation of the recent revival of liberal trade theory. By doing so, it puts the basic arguments of the thesis into broader perspective. Lastly it evaluates the current changes in World Bank policies and suggests possible lessons for developing countries.

8.1. REVIEW OF THE CHAPTERS

The thesis is divided into two parts. The first part tackles the theoretical discourse and the second part investigates the empirical literature. Each part is comprised of three chapters.

Chapter two examines classical trade theory. It focuses on Ricardo's theory of comparative advantage. It argues that given the simplicity of the model, Ricardo's static comparative advantage theory is fundamentally correct. Critics who focus on its assumptions contribute significantly to the development of the theory by removing or modifying the assumptions. However, they do not challenge the basic tenets of the theory. Its basic assertions remain unaffected. In its static form, where all parameters are fixed and assumed constant, specialisation according to Ricardo's model makes sense. This, however, neither means that free trade will equally benefit all countries nor that developing countries should accept the rules of comparative advantage and specialise in primary commodities. The theory is wrong in asserting that trade liberalisation and free markets are the best mechanisms for trade and that all participants gain from free trade. The real weaknesses of the theory are threefold: first, the theory is static and exclusively focuses on short-term static-efficiency gains through specialisation. It completely disregards long-run gains from protectionism designed to maximise future wealth. Second, it ignores the distributional conflicts

among participant countries. It assumes that all countries benefit from trade but does not specify by which mechanism. In reality, the benefits might be unevenly distributed and may cause international conflict. Lastly, the theory is based on a simplistic interpretation of labour theory of value. It assumes that the same amount of labour time creates an equal amount of value in the production of different commodities. This is not true in reality, as different types of labour power have different characteristics (e.g. skilled and unskilled labour) and create different quantities of value given the same labour time in the production process. For example, the value created by spending one hour of labour in computing is not equal to the value created by spending one hour in shoe-polishing. In Ricardo's original example, if value creation in spending one hour in wine production is lower than in cloth production, specialisation on wine production is not a good option for any country, regardless of its comparative advantage. Specialisation may indeed save labour time and thus increase productivity. It is wrong, however, to assume that all participants will benefit equally from this static-efficiency. This chapter concludes that the comparative advantage theory is misleading, and specialisation based on comparative advantage may seriously damage the development process of a country. Developing countries need to develop competitiveness in certain commodities, which bring long-term benefits, by employing industrial policies including protectionist trade policies.

Chapter three deals with the neoclassical version of comparative advantage theory. It argues that, even though the Heckscher-Ohlin model was produced as an alternative to the Ricardian model and is assumed to be the greatest contribution to international trade theory, it marks a leap backwards. The model has a clear ideological mission: eliminating labour value theory and incorporating the neoclassical price mechanism into international trade theory. The neoclassical theory blames the Ricardian model for assuming, rather than explaining, the reasons for comparative advantage. The factor endowment theory, however, explains not only the reasons for the differences in relative commodity prices by the factor endowments of the countries but also the effect of international trade on these factors of production. This chapter argues that the Heckscher-Ohlin model is theoretically weak and empirically inconclusive. It first shows that the basic predictions of the theory go against the facts of history. The empirical evidence is contrary to the expectations of

the theory: there is no tendency for factor prices to equalise, trade between the developed and developing countries is relatively small and the 'Leontief paradox' continue to puzzle researchers. This chapter also challenges the validity of the empirical literature. Most of the empirical literature is concerned with the ability of the theory to explain trade patterns in a country. The advocates of the theory mistakenly believe that if the theory predicts the trade pattern correctly, this would prove its validity. There might indeed be some similarities between a country's trade pattern and its 'endowments'. However, even if the theory could predict the trade pattern accurately, it would still not prove the alleged benefits of trade, based on comparative advantage theory. This chapter finally elaborates the theoretical validity of the Heckscher-Ohlin theory. The problems of the model are heavily imbedded in its assumptions. It argues that the treatment of capital and labour as factor endowments is fundamentally misleading. The theory assumes capital and labour to be given to all countries by a 'divine force', and then tries to predict the trade pattern accordingly. This argument is fundamentally flawed since capital is a product of labour. When capital is allowed to be produced, there is no such thing as capital 'scarcity' and 'abundance'. Moreover, as the well-known 'capital controversy' proves, there is no unambiguous way to know whether a country is labour or capital-abundant, since the value of capital cannot be determined independently of factor prices. This chapter concludes that even though the theory has serious theoretical and empirical problems, the ideological convenience of the theory is so great that it is unlikely to be abandoned unless another, better performing, general equilibrium model can be devised.

Chapter four is divided into three sections. The first section tackles the so-called 'dynamic-comparative advantage' theories. The dynamic versions of comparative advantage theory seek to remove the static nature of the theory by focusing on future rather than current cost structures. This section argues that dynamic comparative advantage is a contradiction: first, because relative future cost remains a static concept, as it relies on static parameters like the production function and factor endowments; and second, if competitiveness is created dynamically by the decisions of the policymaker, this cannot be called comparative advantage. This is because a country may not have any current or future comparative advantage in the production of a commodity, but future competitiveness might be created through the conscious

production and protection decisions of policymakers. In this case, future competitiveness will be determined by the success of industrial policies, and the only comparative advantage a country might have is a carefully designed industrial policy. Thus, it can be argued that comparative advantage theory is a static theory by nature and cannot be made dynamic.

The second section briefly evaluates the debate over trade policies. This section attempts to clarify the confusion over the concepts of import-substitution and export-promotion, and argues that these are not alternative but complementary trade policies. First, the 'import-substitution – export-promotion' dichotomy derives from the two-sector, static neoclassical model. In a more dynamic world where there are three sectors and unemployment, these two policies can be implemented together. Second, learning-by-doing and scale economies depend on the size of the market, and import-substitution and export-promotion policies guarantee the size of the market in turn. Thus, import-substitution can be seen as a precondition for export-promotion policies. They are both structuralist policies. Export-promotion should not be confused with trade liberalisation. The last section of this chapter summarises and critically evaluates the controversy over export pessimism. Export pessimism argues that developing countries benefit less from trade as a result of the characteristics of the commodities they trade. It advocates protectionist policies in order to change the composition of exports, from primary and agricultural commodities to manufactured commodities. Export pessimists believe that specialisation in primary commodities has certain disadvantages such as low price elasticity and declining demand in international markets. Even though these arguments have come under attack, this chapter produces theoretical and empirical evidence to suggest that their arguments are generally correct. There is sufficient evidence to suggest that specialisation in specific commodities does not benefit a country.

Chapter five critically reviews the empirical literature on the impact of openness on economic growth to prepare the ground for an alternative empirical framework. It questions the validity of the empirical literature by examining the measures of openness and the techniques used. It argues that a large part of the literature is irrelevant and does not provide meaningful evidence to support or reject the export-led development hypothesis. This chapter starts by emphasising the

difficulties in finding a coherent measure of trade openness. The existing measures either have serious theoretical deficiencies or are very difficult to calculate. As a result, they are either unreliable or cover only a limited number of countries or short time periods. Thus they are incomparable across countries and through time. Consequently, different measures of openness are uncorrelated, indicating a serious measurement problem. Moreover, different methods that are intended to measure trade intensity and trade liberalisation are assumed to be measuring trade openness. This is a mistake. The impact of trade liberalisation on openness is not as simple as some researchers believe.

This chapter moves on to summarise the earlier literature regarding the relation between export growth and economic growth. It first examines the work based on production function. Earlier empirical work usually tested for a correlation between export and economic growth rates. Any correlation was interpreted as support for the export-led development hypothesis. This method was criticised on the grounds that exports were a component of GDP. Therefore, autocorrelation between them was expected. It also excluded other important determinants of economic growth, such as the investment rate.

The proponents of the export-led development hypothesis dismissed the first criticism by arguing that exports and import-substituting production compete over limited resources. Thus, a positive correlation demonstrates a positive efficiency gain through a movement of resources from inefficient import-substituting sectors to export sectors. As a response to the second criticism, exports were introduced into the production function with capital and labour and was meant to prove that the marginal productivity of both labour and capital are higher in the export sector. The inclusion of exports in the production function was justified on the basis that the export sector had positive externalities that could feed into the non-export sector. This proposition was tested by Sheehey (1990 and 1993) and found to be inconsistent since the application of the same test for each of the major subcategories of GDP (such as government consumption, manufacturing and services) gave similar results. This section tested both hypotheses (first, that exports and import-substituting production compete over limited resources; and second, that exports have positive externalities) by running a Granger causality test between home goods and exports. If the first

hypothesis is right, there must be a negative correlation between a change in the production of current exports and a change in the current production of home goods. If the externality argument is right, there must be a positive correlation between past values of exports and current values of home goods. The results of the test provided no support for either hypothesis.

Moreover, this line of empirical work was criticised because a strong correlation between exports and economic growth does not prove causality from exports to economic growth. This chapter provides theoretical arguments to explain causality running from economic growth to exports. Then empirical tests were done on the validity of the causality arguments. Employing four different methods, the causality between exports and economic growth was tested and the results did not support the export-led development hypothesis.

Finally, this chapter investigated the validity of David Dollar's increasingly popular trade liberalisation index. Dollar developed this index based on the idea that trade barriers cause higher prices. He adjusted national price levels by factor endowments and used the differences between the actual and predicted price levels as a measure of real exchange rate distortions. He then used this index to show that economic growth rates were negatively correlated with exchange rate distortions. This chapter challenges Dollar's index at both theoretical and empirical levels. It argues that an international comparison of domestic price formation is more complex than Dollar's interpretation. There are reasons for a country having a higher or lower price level than can be 'justified' by its factor endowments. Consequently a country may have a perfectly competitive real exchange rate with a relatively higher average price level. Dollar's index is also challenged empirically. The results show that there is no consistent relationship between the index and economic growth rates for different time periods and country groups. The correlation coefficients are in some cases positive and/or insignificant. Second, there is a weaker and inconsistent correlation between the index and export performance. Obviously, if real exchange rate distortions have any impact on economic performance, this must come through its impact on export performance. The results of the empirical tests, however, show that in some cases there is a strong correlation between the Dollar index and economic growth, even though there is no significant correlation between the index and export performance.

Consequently, this result casts some doubts on the validity of the index as a measure of trade liberalisation.

Chapter six offers an alternative measure of trade openness and empirically tests the hypothesis that openness accelerates economic growth. The alternative measure of openness is based on Balassa's (1985) structurally adjusted trade intensity index. This index aims to separate the differences between actual trade figures and trade policy objectives by adjusting trade intensity by the structural characteristics of a country. If properly formulated, this method isolates those other factors that influence trade performance and determines the extent of trade openness as a result of conscious policy choice. If all the factors influencing trade performance can be identified and controlled, then the unexplained can be assumed to be openness by policy choice. In order to construct this index, trade intensity is modified by the structural characteristics of the economy which are the size of manufacturing, the size of the economy and the availability of natural resources. This is done by running a regression between the trade intensity and the other relevant variables and saving the residuals from this regression as the openness index. This index is then included in a regression where the dependent variable is the economic growth rate. Other independent variables are assumed to control for the external and internal factors (including policy variables) that may influence economic performance.

The regressions reveal some interesting results. With this method, the classification of countries according to their openness displays important differences from the classification of the *World Development Report* (1987). Countries classified as strongly or moderately inward-oriented in the report, such as Nigeria and Sri Lanka, are much more open according to the new index. On the other hand, countries such as Brazil and Chile, classified as moderately open in the report, do not appear to be so in this classification. More interestingly, Japan and the United States are classified among the strongly inward-oriented countries. The regression results also suggest that openness has a significant impact on economic growth only for middle-income countries. This means that openness, as a policy choice, does not make a positive contribution to economic growth in the low- and high-income countries. These results strongly deny the validity of the export-led development hypothesis for low- and high-income countries. However, the existence of a positive correlation

between openness and economic growth does not necessarily support the export-led development hypothesis for middle-income countries. An investigation of trade intensity and economic growth figures reveals that, from the 1960s to the 1990s, economic growth rates for the middle- and high-income countries have declined, while the trade ratio has increased substantially. This figure suggests that if there is any correlation between openness and the economic growth rate, it must be negative. Indeed, a regression between the GDP growth rate and the trade ratio (with investment and export growth rates as the other independent variables) reveals that the correlation is negative. These results inevitably lead to the conclusion that there must be fallacies of composition. In other words, more open middle-income countries grow relatively faster but they do not grow faster altogether when they increase their overall openness.

Finally chapter seven criticises the World Bank's 'The East Asian Miracle' report and displays the weaknesses of the arguments it uses to defend the neoclassical paradigm. The development experiences of these countries are increasingly used against the adherents of liberalisation policies. The report accepts the presence of industrial policies in these countries but argues that they were ineffective and unnecessary. Since they were ineffective, the success of these countries must have occurred despite industrial policy. They could have done even better without state intervention. According to the report, their success resulted from getting the 'basics' or 'fundamentals' right. This chapter first summarises the historical circumstances that contributed to the rapid development of these countries. The impact of the Cold War and the influence of the US policy on development are fairly uncontroversial. Then, it focuses on the report's empirical arguments on industrial policy. The report puts strong emphasis on exchange rate policies. It argues that HPAE governments used exchange rate policies in order to stimulate exports. The empirical evidence presented in this chapter, however, does not support this argument. An observation of the real exchange rate devaluations of these countries denies the report's arguments. Moreover, further empirical investigations suggest that the relationship between exchange rate devaluations and export performance is not as simple as the Report believes. This chapter also criticises the empirical work in the report, which seeks to prove that industrial policies did not contribute to the industrialisation process in this

countries. It argues that they are based on very weak theoretical foundations and, even so, still do not support the conclusions derived by the Report. This chapter concludes that because the report cannot prove its own conclusions, it is political and ideological.

In conclusion, this thesis provides theoretical and empirical evidence to suggest that neither openness nor trade liberalisation necessarily lead to improved economic performance. The appropriate levels of openness and trade liberalisation are different for different countries and will be determined by their specific circumstances. Any attempt to impose a universal solution is bound to be ineffective as well as costly. Trade is not an engine of growth, nor is it a magical solution for development problems. Rather than being preoccupied with trade liberalisation, developing countries ought to find alternative ways to promote capital accumulation and increase their competitiveness in international markets.

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